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## Criteria for a Theory of Nineteenth-Century Sonata Form

Julian Horton

### Romantic Sonata Form and the Tyranny of Classicism

The renewed interest in *Formenlehre* over the past two decades has opened up fresh possibilities for the theory and analysis of nineteenth-century form. Spurred on by the classically orientated theories of William Caplin, James Hepokoski and Warren Darcy on the one hand, and by Hepokoski's post-Romantically orientated sonata deformation theory on the other, theorists have approached the nineteenth-century repertoire with renewed vigour.<sup>1</sup> Above all, momentum has gathered towards the creation of a formal theory, which explains the specificity of nineteenth-century forms in analogy with the taxonomies offered by form-functional or sonata theories.

Sonata form represents both a central concern and a major impediment for this project: the former, because it is the century's most prestigious instrumental form; the latter, because the theoretical problems it poses are dauntingly complex. The ambition of a Romantic *Formenlehre* is further obstructed by the lingering perception that nineteenth-century sonatas represent a moribund aftermath to their Viennese Classical forebears. In much literature, the high-classical sonata's centrality is axiomatic to the point of self-evidence. For Charles Rosen, this condition obtained thanks to the essential relationship between form and style: sonata form had historical relevance so long as it was an expression of musical style. Its codification in the early nineteenth century severed the link with stylistic evolution and transformed the sonata into a fixed scheme, which composers more-or-less competently reproduced.<sup>2</sup> In these terms, post-Beethovenian sonatas do not instantiate stylistic change, but uncomfortably conjoin classical form and Romantic lyricism.<sup>3</sup>

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<sup>1</sup> William E. Caplin, *Classical Form: A Theory of Formal Functions for the Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998) and *Analyzing Classical Form: An Approach for the Classroom* (New York and Oxford: Oxford University Press, 2013), and James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth-Century Sonata* (New York and Oxford: Oxford University Press, 2006).

<sup>2</sup> Charles Rosen, *Sonata Forms* (New York: Norton, 1988), 292, and see also the frankly outrageous remarks at *ibid.*, 293: "The stereotypes of sonata construction in the nineteenth and twentieth centuries are representative not so much of a developing musical language as of the individual composer's laziness or despair."

<sup>3</sup> Perceptions of a dichotomy between the Romantic lyric style and classical form are especially prominent in Schubert and Mendelssohn scholarship; see for instance: Felix Salzer, "Die Sonatenform bei Schubert," *Studien zur Musikwissenschaft* 15 (1928), 86–125; Su-Yin Mak, *Schubert's Lyricism Reconsidered: Structure, Design and Rhetoric* (Saarbrücken: Lambert, 2010) and "Schubert's Sonata Forms and the Poetics of the Lyric," *Journal of Musicology* 23/2 (2006), 263–306; Friedhelm Krummacher, "Zur Kompositionsart Mendelssohns. Thesen am Beispiel der Streichquartette," in Carl Dahlhaus (ed.), *Das Problem Mendelssohn* (Regensburg: Bosse, 1974), 169–84, trans. Douglass Seaton

The new *Formenlehre* has encouraged fresh perspectives on these issues. For Hepokoski and Darcy, the differences between Classical and Romantic sonatas arise through the normalization of exceptions: the form's history is driven after 1800 by the conversion of "deformations," or "purposely strained or non-normative [realizations] of an action-space," into norms:

Deformations ... are common within the works of many different late-eighteenth-century composers. ... Such occurrences, in dialogue with a norm, should not be regarded as redefining that norm unless the composer continued to employ that idiosyncratic feature in other works ... or unless later composers picked up the deformation as one of their more-or-less standard options. When this later occurrence happens, the original exception is no longer to be regarded as a deformation *per se* but becomes one of the lower-level defaults within the sonata-theory system. What was a deformation in Beethoven could become a lower-level default in Schumann, Liszt or Wagner – part of a larger network of nineteenth-century sonata-deformation families.<sup>4</sup>

In this model, classical norms remain not as dead schemes (*pace* Rosen), but as "regulative" structures underwriting the music's anchorage in tradition.<sup>5</sup>

The historical stance of form-functional theory has been less overtly expressed, thanks in part to Caplin's focus on syntax rather than form as such.<sup>6</sup> As a result, perspectives on the nineteenth-century repertoire indebted to Caplin have not generally articulated a unified historical position. Janet Schmalfeldt links theory and history via the notion of "becoming," which is both a theoretical concept and a category in the history of ideas tracking back to Hegel. This allows her to posit a processual notion of form, which emerges

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as "On Mendelssohn's Compositional Style," in Seaton (ed.), *The Mendelssohn Companion* (Westport, CT and London: Greenwood Press, 2001), 551–68 and *Mendelssohn – der Komponist: Studien zur Kammermusik für Streicher* (Munich: Wilhelm Fink, 1978); and Greg Vitercik, "Mendelssohn the Progressive," *Journal of Musicological Research* 8 (1989), 333–74.

<sup>4</sup> Hepokoski and Darcy, *Elements of Sonata Theory*, 11.

<sup>5</sup> "[Sonata theory] provides a foundation for considering works from the decades to come – late Beethoven, Schubert, Weber, Mendelssohn, Schumann, Liszt, Brahms, Bruckner, Strauss, Mahler, the 'nationalist composers,' and so on. As we point out from time to time, most [classical] sonata norms remained in place as regulative ideas throughout the nineteenth century" (*Elements of Sonata Theory*, vii). This view represents a shift in perspective from Hepokoski's earlier work, which conceives late-nineteenth- and early twentieth-century "post-sonata" procedures as deformations of the "standard-textbook" form; see *Sibelius: Symphony No. 5* (Cambridge: Cambridge University Press, 1993), 5.

<sup>6</sup> See for example "What are Formal Functions?" in Pieter Bergé (ed.), *Musical Form, Forms and Formenlehre* (Leuven: Leuven University Press, 2009), 21–49, especially 32: "the privileging of function over type distinguishes my approach from that of, say, Charles Rosen, or James Hepokoski and Warren Darcy .... I see classical form as arising out of a common set of formal functions, which are deployed in different ways to create multiple full-movement types. The common element is not sonata form *per se*, but rather the functions that make up the various forms."

historically in analogy with the progress of idealist philosophy.<sup>7</sup> Becoming signals a twofold change in the way form is understood: it privileges form's "coming into being" over the concatenation of generic conventions; and it underwrites formal processes with a guiding "idea" reflecting a new consciousness of form as a self-sufficient category. This perception suggests that Romantic sonatas deserve a historical status that Rosen disavows. We can understand Beethoven's formal self-consciousness as initiating an historical coming of age, rather than a decline: and increasing awareness of form and the ability to reflect upon it as a vehicle for the conveyance of ideas imply historical maturity, not decadence. The self-reflective, processual sonata's historical significance is evidenced by its accretion of cultural-political baggage. The world-historical aspirations of Beethoven's Third, Fifth and Ninth symphonies, for instance, depend crucially on sonata form's ability to narrate teleological processes, a capacity that vertiginously raises the form's aesthetic and political stakes. It is hard to reconcile these developments with Rosen's idea that the sonata after Beethoven no longer "has a history."<sup>8</sup>

Arguing more overtly for a *Formenlehre* that liberates nineteenth-century sonatas from their classical indenture, Steven Vande Moortele has diagnosed the need for "a theory of Romantic form that defines in a positive manner the practice of successive generations of composers without losing track of the ongoing relevance of earlier norms and conventions."<sup>9</sup> Elaborating this aim as it applies to the concert overture, he advocates a genre-specific approach, which classifies form-functional procedures in historically and generically bounded contexts. To this end, Vande Moortele seeks a path between what he terms "negative" and "positive" attitudes: that is, between complete reliance on classical norms and the need to repeat "Caplin's taxonomic project for a new repertoire."<sup>10</sup>

It is beyond this essay's scope to develop Vande Moortele's or Schmalfeldt's agendas in detail; I have pursued this objective elsewhere, taking the piano concerto as a focal genre.<sup>11</sup> Here, I offer two case studies of the difficulties to which this project gives rise. The first

<sup>7</sup> Janet Schmalfeldt, *In the Process of Becoming: Analytic and Philosophical Perspectives on Form in Nineteenth-Century Music* (New York and Oxford: Oxford University Press, 2011), especially 3–21 and 23–57.

<sup>8</sup> As Rosen phrases it; see *Sonata Forms*, 292.

<sup>9</sup> Steven Vande Moortele, "In Search of Romantic Form," *Music Analysis* 32/3 (2013), 404–31, at 424. Other recent excursions into this territory include Andrew Davis, "Chopin and the Romantic Sonata: The First Movement of Op. 58," *Music Theory Spectrum* 36 (2014), 270–94 and Peter H. Smith, "Cadential Content and Cadential Function in the First-Movement Expositions of Schumann's Violin Sonatas," *Music Theory and Analysis* 3 (2016), 27–57.

<sup>10</sup> See Vande Moortele, *The Romantic Overture and Musical Form from Rossini to Wagner* (Cambridge: Cambridge University Press, 2017), 10.

<sup>11</sup> See, respectively, Julian Horton, "John Field and the Alternative History of Concerto First-movement Form," *Music and Letters* 92/1 (2011), 43–83, "Formal Type and Formal Function in the Post-Classical Piano Concerto," in Steven Vande Moortele, Julie Pedneault-Deslauriers, and Nathan Martin (eds.), *Formal Functions in Perspective* (Rochester, NY: University of Rochester Press, 2016), 77–122, and *Brahms' Piano Concerto No. 2, Op. 83: Analytical and Contextual Studies* (Leuven: Peeters, 2017).

focuses on problems of identifying post-classical norms, by tracing the medial caesura's development in a corpus extending from Beethoven to Brahms. The second furnishes a comparative analysis of the relationship between syntax, tonality, and form in two later-century examples: the first movements of Brahms' Symphony No. 1, Op. 68 and Bruckner's Symphony No. 8. I preface these studies with a critique of foundational but under-examined questions of normativity in formal theory.

### ***Formenlehre* and the Problem of Normativity**

Any study of the medial caesura in nineteenth-century practice quickly encounters epistemological and methodological questions raised by its role in theories of classical form. In particular, we might reasonably ask: how do medial caesurae instantiate the concept of a formal norm?

Commentary on this subject has often stressed the distinction between conformational attitudes privileging formal taxonomy and generative attitudes emphasizing the formal responsibilities of musical content.<sup>12</sup> More recently, the debate has polarized around sonata theory's dialogic view, in which composers mediate inherited norms and musical content, and form-functional theory, which conceives form syntactically, in terms of the relationship between function and grouping structure. For the present purposes, I want to acknowledge a foundational distinction between *taxonomic* and *systemic* theories: that is, between theories of the formal designs observable in the repertoire and of the systems from which forms are constructed. Assessing Schenker's *Formenlehre*, Charles J. Smith sought to collapse this distinction, arguing that "*form and fundamental structure are essentially the same thing*," because form is "a projection of the background on the surface of the piece."<sup>13</sup> Yet the *Ursatz* remains an abstraction, posited *a priori* as a systemic axiom, which is visible at the foreground because the system is the underlying resource for any musical form. Schenkerian theory is therefore systemic before it is taxonomic or, in Smith's terms, "particularist;" its capacity to deal with music's specificity reflects this priority. Recent *Formenlehre*, on the other hand, remains primarily taxonomic: its research object is not the abstracted system, but the categories apparent in musical repertoire.<sup>14</sup> *Pace* Smith, I would argue that this is

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<sup>12</sup> The recent literature is extensive, but see for example Mark Evan Bonds, *Wordless Rhetoric: Musical Form and the Metaphor of the Oration* (Cambridge, MA: Harvard University Press, 1991), 13–52; Charles J. Smith, "Musical Form and Fundamental Structure: An Investigation of Schenker's *Formenlehre*," *Music Analysis* 15/2-3 (1996), 191–297; and, by way of summary, Hepokoski and Darcy, *Elements of Sonata Theory*, 3–9.

<sup>13</sup> Smith, "Musical Form and Fundamental Structure," 270 (*italics in original*). Smith later argues that "if we follow a Schenkerian strategy, we need no longer accept the paradoxical notion of two disconnected types of musical form. Taxonomic and unique forms are reconciled; they turn out to be relatives, extracted from different places within one large formal/structural family tree" (280).

<sup>14</sup> As Carl Dahlhaus observes, *Formenlehre* 'is always also a theory of genre'; see *Die Musiktheorie im 18. und 19. Jahrhundert. Zweiter Teil: Deutschland*, ed. Ruth E. Müller (Darmstadt:

unavoidable, because *the concept of form is meaningless beyond the corpus that exhibits it*: if no works embody the properties we theorize as sonata form, then it is a redundant category, regardless of its angle of relation to the divided *Ursatz* or similar constructs. *Formenlehre* is, consequently, *essentially empirical*: its ultimate source of evidence is the corpus, and its claims to identify norms are critically affected by questions of empirical method.<sup>15</sup>

This assertion brings *Formenlehre* within range of epistemological issues, which have their classic formulation in the work of Karl Popper. Two central problems in Popper's epistemology bear directly on formal theory's practice. The first, *induction*, concerns the epistemological validity of inferring "universal statements from singular ones," apostrophized in David Hume's question of whether we can "know more than we know." The second, *demarcation*, concerns the differentiation of empirical and metaphysical assertions, or "the problem of finding a criterion which would enable us to distinguish between the empirical sciences on the one hand, and mathematics and logic as well as 'metaphysical' systems on the other."<sup>16</sup> Popper argues that inductive inferences from empirical evidence cannot be justified on either logical or empirical grounds. On the one hand, there is no strict inductive logic that verifies evidentially derived statements, because such logic would by definition be *a priori* and thus anterior to experience, whereas evidence is amassed *a posteriori*, on the basis of experience. On the other hand, any *synthetic* statement – that is, any statement in which the predicate does not simply qualify the subject – must be *falsifiable*, being by definition non-

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Wissenschaftlicher Buchgesellschaft, 1989), 222 and see also Vande Moortele, *The Romantic Overture*, 1. Marx's theory could be understood as an attempt to use dialectics to bridge this gap, establishing the dialectical succession of "*fundamental forms*" (motive, *Gang* and *Satz*), "*artistic forms*" (the "forms of complete art works," which are "joined together out of *Gänge* and *Sätze*"), "*combined forms*" (cycles of movements), and "*singular forms*" (content-based forms, chiefly fantasia, recitative and melodrama). See "Die Form in der Musik" in J. A. Romberg (ed.), *Die Wissenschaften im neunzehnten Jahrhundert* (Leipzig: Rombergs Verlag, 1856), 21–48 and "Form in Music," in Scott Burnham (trans. and ed.), *Musical Form in the Age of Beethoven* (Cambridge: Cambridge University Press, 1997), 55–90.

<sup>15</sup> Reflections on empiricism in musical research have tended to be musicological rather than music-theoretical; I think for instance of Nicholas Cook and Eric Clarke (eds.), *Empirical Musicology: Aims, Methods, Prospects* (New York and Oxford: Oxford University Press, 2004). In recent music theory, the lead has been taken by eighteenth-century studies, for instance Robert O. Gjerdingen, *A Classic Turn of Phrase* (Philadelphia, PA: University of Pennsylvania Press, 1988) and *Music in the Galant Style* (New York and Oxford: Oxford University Press, 2007), Vasili Byros, "Meyer's Anvil: Revisiting the Schema Concept," *Music Analysis* 31/3 (2012), 273–346 and Nathan Martin and Julie Pedneault-Deslauriers, "The Mozartean Half Cadence," in Markus Neuwirth and Pieter Bergé (eds.), *What is a Cadence? Theoretical and Analytical Perspectives on Cadences in the Classical Repertoire* (Leuven: Leuven University Press, 2015), 183–211. A seminal empirical approach to the nineteenth-century sonata is found in James Webster, "The General and the Particular in Brahms's Later Sonata Forms," in George S. Bozart (ed.), *Brahms Studies: Analytical and Historical Perspectives* (Oxford: Oxford University Press, 1990), 49–78.

<sup>16</sup> Karl Popper, *The Logic of Scientific Discovery* (London: Routledge, 2002), 11. The problem of induction is introduced in *ibid.*, 1–7. For consideration of induction in a musical context, see David Huron, *Sweet Anticipation: Music and the Psychology of Expectation* (Cambridge, MA: MIT Press, 2006), 59–60.

tautologous.<sup>17</sup> This means that extrapolations from evidence are necessarily provisional and vulnerable to contradiction; as Popper famously explains:

It is far from obvious, from a logical point of view, that we are justified in inferring universal statements from singular ones, no matter how numerous: for any conclusion drawn in this way may always turn out to be false: no matter how many instances of white swans we observe, this does not justify the conclusion that *all* swans are white.<sup>18</sup>

In brief, Popper answers Hume's question negatively: we cannot "know more than we know." Empirical method is therefore essentially deductive, proceeding from evidence to the exploration of its properties, not to the extrapolation of universals.

Because it extracts general principles from a corpus, *Formenlehre* is bound closely to the problem of induction. Typically, it deploys induction as an antidote to solipsism. Theoretical research is at base *analytical*, because the search for practices comprising its categorical framework primarily involves analysis of the corpus. This framework's utility is, however, usually analytical as well: it has value to the extent that it can be applied to works, which, since both theorist and analyst tend to operate within the canon, often have membership of the corpus with which the theorist began. What the theorist derives, the analyst applies, but the research object remains the same. Of course, the analyst may also apply the theorist's framework to music beyond its corpus, but this does not alleviate the problem; it simply expands the theory's evidential corpus by proxy.

Nineteenth- and early twentieth-century theorists generally evaded this dilemma because their aims were *pedagogical*: practitioners from Reicha to Schoenberg extracted principles from the repertoire in order to extend it through composition, which meant that their theories' utility was the production of new music, not the analysis of old music.<sup>19</sup>

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<sup>17</sup> That is, the negation of its predicate does not render the predicate's relationship to the subject self-contradictory, as it would in an analytic statement. The distinction between synthetic and analytic statements in this sense is generally referred back to Immanuel Kant, *Critique of Pure Reason*, trans. J. M. D. Meikeljohn (London: Dent, 1991), 30–2.

<sup>18</sup> See Popper, *The Logic of Scientific Discovery*, 27.

<sup>19</sup> As Dahlhaus explains: "The scheme known as sonata form was first drawn up in the early nineteenth century, on the basis of works by Beethoven .... It was not intended primarily as an analytical tool, but as an aid in teaching the rudiments of composition .... As formal theory was subsumed in analysis, the scheme was not so much revised as subjected to a change of function. It no longer has the status of a norm regulating the outlines of a sonata movement, but it serves as a heuristic model, providing the starting point for an analysis." See Dahlhaus, *Ludwig Van Beethoven: Approaches to His Music*, trans. Mary Whittall (Oxford: Clarendon Press, 1991), 96–7. Evidence for this paradigm shift include Percy Goetschius, *Lessons in Music Form* (repr. Chicago: Plain Label Books, 1968), the preface to which (iv) explains that the book's explanations are "conducted solely with a view to the *Analysis* [emphasis in original] of musical works, and is not calculated to prepare

Modern *Formenlehre*, on the other hand, often applies its categories analytically as formal universals regulating practice in general. Hepokoski and Darcy's rule that the medial caesura is a precondition for a subordinate theme for example applies to all sonata forms in late-eighteenth-century practice, not only to their evidential sample.<sup>20</sup> This manoeuvre mobilizes both of Popper's epistemological issues. To make such a claim is to reason by induction: a property extracted from the corpus transforms into a general principle. And because this criterion is now universal, it also raises questions of demarcation: we may well ask under what conditions it can be falsified, that is to say, "refuted by experience."<sup>21</sup>

How we understand the medial caesura's epistemological status in relation to these issues depends critically on what kind of norm we think it is. Three notions of normativity prominent in the human sciences can be mobilized to frame this question: medial-caesura norms can be understood *quantitatively*, as conventions that are statistically verified; *sociologically*, as concepts regulating social praxis; or *prototypically*, as cognitive types permitting the assimilation of diverse information. If medial-caesura defaults are *quantitatively* normative, then the problem of induction is offset by statistical inference: the defaults are principles extrapolated statistically from a corpus, by extending the mean of the sample to the population as a whole. Yet when sonata theory argues for the classical normativity of the V:HC MC, it does not do so in overtly quantitative terms: the diversity of medial-caesura practice is not expressed as a range of numerical values yielding a mean that defines the norm, and there is no null hypothesis articulated to test the result. In all, the idea that norms should be *quantitatively* verified is not a prominent part of the theory's technical apparatus.<sup>22</sup> To infer that the V:HC MC is a norm for eighteenth-century sonata form because it features prevalently in sonata theory's sample is not to argue for its quantitative normativity.

If sonata norms are *sociological* rather than quantitative, then this implies that they operate in the same way as behavioural codes: the statement that the medial caesura is a compositional norm resembles the claim that, for example, respecting private property is a societal norm. It also suggests that composers employ medial caesurae for the same reason

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the student for the application of form in practical composition." On this point, see Arnold Whittall and Jonathan Dunsby, *Music Analysis in Theory and Practice* (London: Faber, 1988), 62. Ian Bent, in contrast, envisages a more gradual progression, as a result of which the analytical impulse gradually gains its independence across the seventeenth, eighteenth and nineteenth centuries; see Bent, ed., *Music Analysis in the Nineteenth Century*, vol. I: *Fugue, Form and Style* (Cambridge: Cambridge University Press, 1994), xiii–xv.

<sup>20</sup> On Hepokoski and Darcy's approach to the medial caesura, see for example Markus Neuwirth, "Joseph Haydn's "Witty" Play on Hepokoski and Darcy's *Elements of Sonata Theory*," *Zeitschrift der Gesellschaft für Musiktheorie* 8/1 (2011), 199–220.

<sup>21</sup> Popper, *The Logic of Scientific Discovery*, 18.

<sup>22</sup> My understanding of quantitative method draws principally on Thomas R. Black, *Doing Quantitative Research in the Social Sciences: An Integrated Approach to Research Design, Measurement and Statistics* (London: Sage, 1999), and see also Huron's survey of the statistical properties of melody in *Sweet Anticipation*, 73–89. I am also grateful to Janet Varley for her advice.



that any normative behaviour is adopted: because they constitute conventions regulating group behaviour. When Hepokoski and Darcy define sonata form as “a musical utterance that is set into dialogue with generic options that are themselves taken socially to be sonata-defining,” they steer in this direction.<sup>23</sup> In this case, quantitative provenance matters less than the assumption that widely observable musical habits are *de facto* normative.<sup>24</sup>

But is this assumption well-founded? One current conception defines social norms as codes, the transgression of which can be penalized, and the penalty for which is recognized by any unaffected third party.<sup>25</sup> Such a definition excludes the norms defined by *Formenlehre*, since their transgression carries no penalty and no threat of third-party enforcement. Alternatively, we might invoke Durkheim’s looser notion of the “social fact,” or “any way of acting, whether fixed or not, capable of exerting over the individual an external constraint or which is general over the whole of a given society whilst having an existence of its own, independent of its individual manifestations.”<sup>26</sup> Although it is true that sonata forms are fundamentally implicated in social action, this doesn’t distinguish them from other musical activities with theoretical precision. To say that sonata form defines eighteenth- and nineteenth-century domestic genres situates it in a social domain (the aristocracy; the emerging bourgeoisie), but this affords no purchase on the question of why some sonatas bisect their expositions with medial caesurae and others do not, or why some have three rotations and others have two, or why some recapitulate their main theme in the tonic and others in the subdominant. Although social convention supplies a human context for style, technology, and modes of listening, it cannot meaningfully parse formal-technical features in the way that *Formenlehre* demands.

The fact that formal practices are generically mobile, while genres imply distinct social spheres, further complicates this issue. Sonata forms occur in diverse genres, the sociology of which differs extensively: it would be irresponsible to argue that a Mass for the Imperial Chapel in Vienna is sociologically equivalent to a *Singspiel* for the Theater auf der Wieden because both exhibit sonata forms. Yet if formal features can migrate generically, then the kind of norm they represent stands apart from the social conventions they help to

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<sup>23</sup> *Elements of Sonata Theory*, 616.

<sup>24</sup> In this regard, Carl Dahlhaus has pointed out that the decision to privilege numerical prevalence is aesthetic, not statistical; see “Der rhetorische Formbegriff H. Chr. Kochs und die Theorie der Sonatenform,” *Archiv für Musikwissenschaft* 35/3, (1978), 155–76, at 156.

<sup>25</sup> For a definition along these lines, see for example Jonathan Bendor and Piotr Swistak, “The Evolution of Norms,” *American Journal of Sociology* 106/6 (2001), 1493–1595, and especially 1494, where social norms are defined as “behavioral rules that are backed by sanctions,” which “can be extended to *third parties*” [italics in original]. Bendor and Swistak in turn reference George C. Homans, *The Human Group* (New York: Harcourt Brace, 1950) and Judith Blake and Kingsley Davis, “Norms, Values, and Sanctions,” in Robert Farris (ed.), *Handbook of Modern Sociology* (Chicago: Rand McNally, 1964), 456–84.

<sup>26</sup> Émile Durkheim, *The Rules of Sociological Method*, ed. Steven Lukes, trans. W. D. Halls (Basingstoke: Macmillan, 1982), 59.

articulate. In the worst-case scenario, sociological definition of formal norms may simply be impossible: the medial caesura doesn't function sociologically, because formal conventions are not social conventions.

Finally, we might consider whether formal norms are analogous to cognitive rather than Weberian ideal types, after the manner, for example, of Eleanor Rosch's prototype theory, which argues that humans process experiential diversity by categorizing it in relation to prototypes standing for phenomena exhibiting more-or-less similar properties. As she explains: "categories in certain perceptual domains ... develop non-arbitrarily around perceptually salient prototypes."<sup>27</sup> In these terms, a norm constitutes a prototypical feature, which anchors the categorization of phenomena by functioning as a cognitive "reference point." Extending this notion to sonata form, we might think of the V:HC MC as a prototype for MCs in general, the two-part exposition as a prototype for expositions in general, the type-3 model as a prototype for sonata forms in general; and so on. It should however be clear that typicality defined by statistical prevalence is not the same as typicality defined in cognitive terms. On the one hand, a prototype does not have to demonstrate empirical ubiquity in order to function as such: dogs do not have to be the most common pet in order for the prototype "dog" to stand for the category "pet." On the other hand, the hunt for common practices in art forms is not analogous to the hunt for prototypes in human cognition. To argue that the V:HC MC is normative in a late-eighteenth-century corpus is to show neither that it operates as a prototype in compositional practice, nor that it serves that function in current perception.<sup>28</sup>

The case studies that follow sketch an attitude towards nineteenth-century sonata form that responds to these debates, initially by testing the empirical basis of normative claims, and latterly by teasing out the analytical issues raised when syntax, system and form interact. The first study tracks the nineteenth-century afterlife of Hepokoski and Darcy's medial-caesura defaults; the second examines one distinctively Romantic form-functional practice as adopted by Bruckner and Brahms – a technique I call *proliferation* – assessing,

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<sup>27</sup> Eleanor Rosch, "Cognitive Reference Points," *Cognitive Psychology* 7 (1975), 532–47, at 532, and see also "Principles of Categorization," in Eleanor Rosch and Barbara B. Lloyd (eds.), *Cognition and Categorization* (Oxford: Lawrence Erlbaum Associates, 1978), 27–48. For musical applications of prototype theory, see Eytan Agmon, "Functional Harmony Revisited: A Prototype-Theoretic Approach," *Music Theory Spectrum* 17/2 (1995), 196–214 and more substantially Lawrence Zbikowski, *Conceptualizing Music: Cognitive Structure, Theory, and Analysis* (New York and Oxford: Oxford University Press, 2002), 36–49, which draws on Rosch's theory as a model of 'natural', or what Zbikowski calls 'type 1' categories, that is, categories that arise in human interactions with their natural context.

<sup>28</sup> It should be noted that the capacity of both evolutionary psychology and prototype theory to explain art at all has recently been challenged, notably by Rosch herself. See Eleanor Rosch, "'If You Depict a Bird, Give It Space to Fly': Eastern Psychologies, the Arts, and Self-Knowledge," *SubStance* 30/1-2 (2001), 236–53 and Thomas Adajian, "On the Prototype Theory of Concepts and the Definition of Art," *The Journal of Aesthetics and Art Criticism* 61 (2003), 231–6, responding to Jeffrey T. Dean, "The Nature of Concepts and the Definition of Art," *The Journal of Aesthetics and Art Criticism* 63/3 (2005), 29–35.

respectively, its syntactic basis, relationship to the chromaticized tonal system, and implications for inter-thematic and large-scale formal strategies.

### Case Study I: The Medial Caesura and the Problem of Deformation

Empirical study of the nineteenth-century medial caesura is instructive for several reasons. As a focus for taxonomy, it is comparatively self-contained, being less diverse than, for example, first-theme syntax, which even in its most compact varieties exhibits numerous variables. At the same time, its formal significance is considerable. As a fundamental aspect of expositional design, the medial caesura's changing character and application facilitates meaningful statements about formal practice in the corpus, which belie its relative brevity as a formal event.

The medial caesura is pivotal for sonata theory, because it underpins the distinction between the unitary and the multipart exposition and determines the presence or absence of the subordinate theme; as Hepokoski and Darcy assert: "*if there is no medial caesura, there is no second theme.*"<sup>29</sup> Although the authors do not report on their data set in a strictly quantitative way, they nevertheless arrange caesurae into a fourfold "default" hierarchy, predicated on frequency of usage, as clarified in Table 1 [insert Table 1 here]. This tactic also signals an inductive leap, because defaults constitute the norms defining late-eighteenth-century practice: non-normative strategies – "deformations" – are purposive "dialogic" misreadings, which might become normative over time.<sup>30</sup>

< Table 1: Sonata theory's hierarchy of medial caesurae >

The present study's corpus is summarized in Table 2; Table 3 explains the terminology adopted. The corpus comprises 173 sonata forms composed by Beethoven, Schubert, Mendelssohn, and Brahms between 1792 and 1894 [insert tables 2 and 3 here].

< Table 2: Corpus >

< Table 3: Glossary of terms >

Corporeal membership observes three basic restrictions. First, I include only domestic works. Any assessment of each composer's total sonata oeuvre would of course also have to consider

<sup>29</sup> Hepokoski and Darcy, *Elements of Sonata Theory*, 52. Hepokoski has since moderated this statement; see, "Sonata Theory, Secondary Themes and Continuous Expositions: Dialogues with Form-Functional Theory," *Music Analysis* 35/1 (2016), 44–74, at 47–8.

<sup>30</sup> See, for example, Hepokoski and Darcy, *Elements of Sonata Theory*, 48, which notes the tendency for the 'blocked' MC to become normative by the mid-nineteenth century.

public genres (symphony; overture; concerto); mindful of the sociological questions raised above, however, I have restricted the corpus' social purview. Second, in view of the often-distinctive sonata procedures evident in slow movements, scherzi and finales, and the strategic motivations for changing MCs in recapitulations, I include only expository first-movement caesurae. Third, I have not examined sonata forms in non-sonata-type genres (as for example in Mendelssohn's Song without Words Op. 19, No. 5), or in genres having loose sonata affiliations (fantasias), although I admit that these distinctions are not always easily enforced.

The corpus incorporates either the composer's total solo and chamber music (as is the case for Brahms' 26 entries), or the greater proportion, omitting fragments, recompositions and juvenilia. For Beethoven, the sample covers 74 works composed between 1792 and 1826, including the complete piano sonatas and string quartets, but excluding fragments and conflating recompositions (for example the Octet Op. 103 and the Quintet Op. 4, the latter being a recomposition of the former). The list for Schubert includes all works with Deutsch numbers for which the original conception advanced beyond the exposition, amounting to 48 movements in total. For Mendelssohn, the list comprises 25 movements including early works published posthumously, and also four works without opus numbers: the Clarinet Sonata, Viola Sonata and the **E-flat** Quartet (all early works); and the Violin Sonata in F of 1838. Where more than one MC is present, for instance in a "tri-modular block," both MCs are included. Taking these factors into account, the sample comprises 196 medial caesurae.

Tables 4–7 sort the MCs according to sonata theory's hierarchy, positioning the first-level default on the left and deformations, which at this stage encompasses everything falling outside the default system, on the far right [**insert tables 4–7 here**].

< Table 4: Beethoven: totals for each MC category (74 movements; 82 MCs; 1792–1826) >

< Table 5: Schubert: totals for each MC category (47 movements; 49 MCs; 1810–1828) >

< Table 6: Mendelssohn: totals for each MC category (25 movements; 25 MCs; 1820–1847)

>

< Table 7: Brahms: totals for each MC category (26 movements; 27 MCs; 1852–1894) >

Two points are striking. First, none of the four composers conforms to the hierarchy; and second, deformations are the majority category. Beethoven's 28 applications of the V:HC MC (34.15% of the sample) confirm its prevalence for him, but the I:HC MC is substantially eclipsed by deformations (twelve as against 26). The other major-mode defaults have a negligible presence, and minor-mode deformations are almost as common as minor-mode norms (ten as against eight, marked with an asterisk in the Table).

Table 5 graphically articulates Schubert's shift of syntactic priorities. Twenty-nine of the caesurae (59.28%) have to be classed as deformations, and those employing defaults do not conform to the hierarchy: I:HC MCs are more common than V:HC MCs (seven against five); and continuous expositions are more numerous than V: or I:PAC MCs (two as against one each). The data in tables 6 and 7 track this change. Schubert's proclivities are sustained by Mendelssohn and Brahms: Mendelssohn retains the V:HC MC (four), V:PAC MC (one) and minor-mode defaults (five); Brahms the V:HC MC (five) and the minor-mode defaults (six); otherwise, the majority of their caesurae constitute deformations (fifteen and sixteen respectively).

The four composers' 'deformational' procedures divide into six clear categories, appraised in Table 8 [**insert Table 8 here**]. In category 1, the MC is overridden by elision, usually because a cadential or preparatory progression's chord of resolution is also the new presentation's first chord. Category 2 also trades in elision, by sustaining a transitional dominant or pre-dominant chord into the B theme.<sup>31</sup> In category 3, a non-standard cadence is used (IAC; PC; IC); in category 4, the MC is evaded and B pursues a different tonal or harmonic course.<sup>32</sup> Category 5 substitutes a chord inversion (6/3 is common) or unorthodox harmony (augmented sixth); and category 6 prepares an unorthodox key. These categories are not always exclusive: an MC might for example tonicize a remote key that is evaded, whilst comprising an inversion of a novel harmony.

< Table 8: 'Deformation' categories: distribution by category and composer >

Table 8 arranges the deformations by category and composer. Beethoven overwhelmingly favours categories 1 and 6.<sup>33</sup> There are twelve movements exhibiting non-standard MC tonalities, and six key choices in total. The least adventurous is the modally mixed B-theme mediant in Op. 13, which later converts to III. More striking are the well-known III:HC MCs in Opp. 31, No. 1 and 53, and the VI:HC MCs in Opp. 29 and 97. The ten movements that elide TR and B do so by three basic means. Opp. 2, No. 1, 18, No. 3 and 102, No. 2 elide a half-cadential approach to the B-theme tonality with a statement and response over V, approaching the dominant via  $\text{V}^{6/3}/\text{V}$ , a German sixth, and the local tonic

<sup>31</sup> I adopt A, B and C for main theme, subordinate theme and closing section throughout, because these labels imply succession, not hierarchy, whereas MT and ST (or P and S) carry the implicit assumption that the first theme has structural primacy, which is not always true in practice. For a recent study of 'strong' B themes in a Romantic context, see Vande Moortele, *The Romantic Overture and Musical Form from Rossini to Wagner*, 146–90.

<sup>32</sup> This has something in common with Hepokoski and Darcy's 'blocked' medial caesura, in which the MC established by the transition is harmonically frustrated and the transitional process continues across the expected caesura fill; see *Elements of Sonata Theory*, 47–8.

<sup>33</sup> On which subject, see Mark Richards, "Beethoven and the Obscured Medial Caesura: A Study in the Transformation of Style," *Music Theory Spectrum* 35/2 (2013), 166–193.

respectively.<sup>34</sup> Opp. 70, No. 1, 90, 106, 110 and 127 instead terminate either a prolonged V or a linear bass progression on a local tonic (either in root position or first inversion), which is also the start of B: Example 1 shows the latter as it occurs in Op. 110 [insert Example 1 here]. In one case – Op. 132 – Beethoven elides TR and B over a VI:PAC. The other categories are sparsely populated. There is one instance of category 4 (Op. 95, where V/i becomes a leading-note pivot into VI), two of category 2 (straightforwardly in Op. 59, No. 2, and more problematically in Op. 109, where the V/V reached at the end of the highly compressed A/TR succession is prolonged by digression until the end of the B group seven bars later), and three of category 5 ( $V^{6/5}$ /VI in Op. 9, No. 3;  $V^9/V$  in Op. 30, No. 1;  $V^{7/3}$  in Op. 81a).

< Example 1: Beethoven, Op. 110/i, exposition, MC and start of B >

Schubert's preferences are rather different. He also favours categories 1 (nine examples, in which elided PACs predominate) and 6 (twelve examples registered), but his key choices range more widely: the  $\#v$ :PAC MC in D. 960 is the most extreme instance. He is however far more interested in evaded MCs, which are of two kinds: either an orthodox MC yields to a B presentation in a more remote tonality; or else a more remote MC tonality is pulled towards a closer relation at the start of B. D. 956, quoted in Example 2, is probably the best-known instance of the former [insert Example 2 here]:

< Example 2: Schubert, D. 956/i, exposition, MC and start of B >

TR concludes with a clear I:HC MC, which B then sidesteps, setting off in  $bIII$ .<sup>35</sup> Evaded I:HC MCs also appear in D. 840, D. 929 and D. 947 (B starting in vii,  $\$v$  and  $bi$  respectively); an evaded V:HC MC occurs in D. 617 (B beginning in  $bIII$ ), and in D. 613, where the MC alights on  $V^{6/5}/V$ , but B begins in  $bIII$ . A clear early example of the second evasion practice appears in D. 36, given in Example 3 [insert Example 3 here]. Here, TR reaches V/ii (C minor) for the MC, but Schubert sidesteps this preparation, working towards the beginning of B in V via an expanded, modulating fill. D. 68 and D. 112 enact the same

<sup>34</sup> On the question of whether these elisions initiate a second theme or not, see on the one hand William Caplin and Nathan Martin, "The Continuous Exposition and the Concept of Subordinate Theme," *Music Analysis* 35/1 (2016), 4–43 and on the other hand Hepokoski, "Sonata Theory, Secondary Themes and Continuous Expositions."

<sup>35</sup> I'm aware that not all commentators accept this as the start of B; but the consistency of B-theme evasion that the survey reveals surely lends weight to the argument that bar 60 is the start of the second theme. On which subject, see Nathan Martin and Steven Vande Moortele, "Formal Functions and Retrospective Reinterpretation in the First Movement of Schubert String Quintet," *Music Analysis* 33/2 (2014), 130–55 and especially 137–42, amplifying David Beach, "Schubert's Experiments with Sonata Form: Form-Tonal Design versus Underlying Structure," *Music Theory Spectrum* 15 (1993), 13–14.

idea using a vi:HC MC; D. 279, D. 887 and D. 898 favour an evaded iii:HC MC. Other strategies are rare: there is one example of a V:IAC MC (D. 894) and two more unusual instances of category 5: D. 112, which has two MC-like events, the first over  $\text{ii}^{6/3}$ , the second over  $\text{vi}^{6/3}$ , forming a “tri-modular block” in sonata-theoretical terms; and D. 625, which employs a  $\text{III}^{6/3}$ :MC.<sup>36</sup>

< Example 3: Schubert, D. 36/i, exposition, MC and start of B >

Mendelssohn is notably less concerned with remote tonalities than Schubert, predominantly employing categories 1, 2, and 4. Again, category 1 involves either cadential or preparatory harmony. In Op. 13, the B theme follows a repeated IAC at the end of TR, the material of which anticipates motivic elements of B. In the Octet, by contrast, B arrives at the end of a long, rhetorically marked standing on V/V. Opus 44, Nos. 1 and 3 both supply clear but relatively fleeting instances of category 4: in No. 1, TR concludes with a V:PAC MC, but B then immediately restarts in iii, pulling back towards V at the antecedent’s end; in No. 3, a conventional I:HC MC prefaces a B-theme antecedent, which initially feints towards V/iii, before moving on to an IAC in V. The consequent phrase however sequences this progression via modal mixture, bringing the music to  $\text{D}^{<\text{flat}>}$  major. Opus 44, No. 2, shown in Example 4, conflates three strategies [**insert Example 4 here**].

< Example 4: Mendelssohn, Op. 44, No. 2/i, exposition, MC and start of B >

The end of TR dies away over V/v, but the persisting  $\text{^5-^6}$  trill in the cello and the 4–3 suspension it supports, which resolves with the anacrusis initiating the B theme, both thwart the clear sense of a caesura, suggesting the elision of TR and B. Yet the first bar of the B theme enacts a V–VI progression in B minor, and the resulting G major harmony then acquires tonic functionality. Mendelssohn, in short, evades a caesura that has already been overridden by elision. Of the four instances of category 2, Op. 66 is surely the most spectacular. As in Op. 44, No. 3, the two themes are fused by the persistence of the transitional texture into B; but Mendelssohn also brings his B antecedent in over a digression away from a structural dominant (V–IV<sup>9</sup>), which is then regained and maintained without resolution until the end of the consequent, which engineers an III:IAC. The exposition however gets no closer to securing  $\text{E}^{<\text{flat}>}$ , turning towards v for the closing section.<sup>37</sup>

<sup>36</sup> On the tri-modular block (TMB), see *Elements of Sonata Theory*, 170–7.

<sup>37</sup> For a more extended analysis of this movement, see Julian Horton, “Mendelssohn’s Piano Trio Op. 66 and the Analysis of Romantic Form,” in Benedict Taylor (ed.), *Rethinking Mendelssohn* (New York and Oxford: Oxford University Press, in press).

Brahms neglects MC evasion (only Op. 18 references this idea), but is otherwise more Schubertian in his choices, favouring categories 1 and 6 (six examples each).<sup>38</sup> All of Brahms' elisions dovetail cadential progressions with B-theme presentations, the most protracted example being Op. 78, where a descending 7–10 linear intervallic pattern in bars 31–4 follows a climactic II:PAC which retrospectively becomes a V:HC, progressing towards V via a PAC, which resolves at the start of the B theme (or IAC, if we regard the piano right-hand D in bar 36 as a cover tone). Brahms' category-6 key choices are evenly distributed, and mostly less diverse than Schubert's, revealing a preference for modally mixed mediant relations (in Opp. 88 and 51, No. 1, the latter surely referencing Beethoven's Op. 13). The lowered sixth is notably absent, except obliquely in Op. 34, which follows Schubert's D. 960 by employing **#v**, here however via an HC rather than a PAC MC (the modality flips enharmonically to the major later on, and the exposition concludes in **bVI**). On two occasions (Opp. 115 and 51, No. 1), Brahms sustains a structural dominant into the B theme, most transparently in Op. 51, No. 1, where V/iii is spun out until the III:PAC closing the B group. Brahms is however most adventurous in his use of harmonically oblique MCs. The clearest example appears in Op. 120, No. 2, shown in Example 5 [**insert Example 5 here**]. The transition decays towards a German-sixth caesura in V, which is prolonged by bass arpeggiation. The B theme however gently discards this chord's orthodox resolution, securing V in root position as part of an unassuming canon at the twelfth between bass and alto.

< Example 5: Brahms, Op. 120, No. 2/i, exposition, MC and start of B >

By way of summary, Table 9 provides totals for all MC categories across the sample [**insert Table 9 here**]. The sheer prevalence of deformations – they comprise approximately 50% of the corpus and vastly predominate for Schubert, Mendelssohn, and Brahms – pleads for a fundamental shift of syntactic priority between 1800 and 1830, which is sustained into the later century. Schubert's increased concern for elision, evasion, and the use of more remote tonalities subtends a decline in all of sonata theory's classical defaults, which Mendelssohn and Brahms consolidate. Simply put: the survey reinforces the perception that sonata theory's defaults become exceptions for Schubert, Mendelssohn and Brahms; and apart from the V:HC MC, they are minority practices for Beethoven as well. Table 10 tracks the defaults' precipitous decline across Beethoven's career [**insert Table 10 here**]. Between 1792 and 1802, first- and second-level defaults hold sway, with a smattering of non-standard procedures, and no use at all of the continuous exposition. After 1802, the diversity of

<sup>38</sup> Since James Webster's work at least, this shouldn't surprise us; see "Schubert's Sonata Forms and Brahms's First Maturity (I)," *19<sup>th</sup>-Century Music* 2/1 (1978), 18–35 and "Schubert's Sonata Forms and Brahms's First Maturity (II)," *19<sup>th</sup>-Century Music* 3/1 (1979), 52–71.



strategies diminishes, polarizing between deformations and the persistence of V: and I:HC MCs, and the continuous exposition surfaces for two examples (Opp. 78 and 79). After 1812, all categories drop away except deformations and the continuous exposition, the last instance of a V:HC MC being Op. 96.

< Table 9: Summary of MC usage (196 MCs) >

< Table 10: Chronology of Beethoven's MC usage >

Exempting the V:HC MC as a declining practice after 1812, the sample's most numerous MC is deformation category 6, the MC in a remote tonality, which appears 34 times. This has two major ramifications. First, it confirms that MC choice is a significant barometer of the chromaticization of tonality. Second, if we are serious about the notion of a default hierarchy, then we are obliged to install category 6 as a high-level norm. Conversely, the V:PAC and I:PAC MCs in effect become deformations.<sup>39</sup> The logic differentiating the V:HC MC from the blocked MC as late-eighteenth-century norm and deformation respectively would now compel us to regard Schubert's solitary V:PAC MC (D. 574) as a deformation of the normative, tonally chromatic MC. The prevalence of TR-B elision (30 examples) is no less suggestive, underlining the new importance of inter-thematic continuity in nineteenth-century practice.

If we seek detailed empirical evidence for stylistic change, we could do worse than explore these data. Yet the difficulty here is not what is present, but what is absent. There is no quantitative way of establishing whether any of the "deformations" are in dialogue with universal norms; to make this claim is, as Popper cautions, to explain singular instances inductively. The corpus' canonical orientation is also a problem. Just how susceptible the statistics are to non-canonical intervention would become apparent if we added Spohr to the equation, who composed some 85 solo and chamber sonata-type works between 1804 and 1857, including 36 string quartets and seven string quintets, which for the most part have played no role in the theoretical discourse on sonata form, but which would add nearly half as many movements again to the corpus. Realistically, the most we can say is that the corpus' syntax after 1812 is *qualitatively* different, valuing strategies of elision and evasion within an expanded tonal framework above the clear delineation of function. This is what the data truly express: not a rearrangement of norms and exceptions, but the shift from one syntax to another within the confines of one possible sample.

## Case Study II: Syntax, Tonality and Form in Brahms and Bruckner

<sup>39</sup> The idea that these MCs are classical defaults also requires nuance, since they become scarce in the repertoire after 1780. I am grateful to Markus Neuwirth for this observation.

The most radical conclusion we could draw from these observations is that the concept of a norm is simply unnecessary for *Formenlehre*: we can explain practices as variably prevalent features of a corpus, without relying on evasive concepts of normativity. The ubiquity or scarcity of medial-caesura habits in the sample above yields rich insights into the differences between Beethoven's and Brahms' syntax, which obtain whether we orientate them around regulatory norms or not.

A post-normative theory of nineteenth-century sonata form would repeat this research for diverse syntactic categories across multiple corpora, acknowledging classical habits where they occur without elevating them to the condition of norms or ideal types. Such a project however leaves two critical issues under-explored: the relationship between syntactic and systemic change, especially the question of how the chromaticization of tonality impacts upon formal function; and the strategic formal decisions in which syntax is implicated. In Caplin's theory, the relationship between syntax and system is evinced in the close coordination of formal function with the harmonic division of labour: initiating and continuation functions are prolongational; closing functions are cadential; framing functions are prolongational or deploy "cadences of limited scope."<sup>40</sup>

Examples 6 and 7 test the extent to which a comparable mentality prevails in a late nineteenth-century context, by applying Caplinian categories to the first-movement A themes of Brahms' Symphony No. 1 (1862–1876) and Bruckner's Symphony No. 8 (1887, revised 1890) respectively. The syntax of Brahms' theme is ostensibly classical [**insert Example 6 here**]. Bars 38–42<sup>1</sup> serve as a thematic introduction, in that they incorporate A-theme motives and stand within the body of the exposition, but nonetheless precede the A theme's initiation.<sup>41</sup> Bars 42–70<sup>1</sup> comprise a sentence: statement bars 42–6<sup>1</sup>; response bars 46–51<sup>1</sup>; continuation bars 51<sup>2</sup>–67<sup>1</sup>; and cadence 67<sup>2</sup>–70<sup>1</sup>. And bars 70–89<sup>1</sup> are periodic, comprising antecedent bars 70–8<sup>1</sup> and consequent bars 78–89<sup>1</sup>, devolving into basic idea bars 71–3 and 78–83 and contrasting idea bars 74–8<sup>1</sup> and 84–9<sup>1</sup>, after which the transition ensues.

< Example 6: Brahms, Op. 68/i, exposition, A theme >

<sup>40</sup> On this last concept, see Caplin, *Analyzing Classical Form*, 155: "If an individual codetta occupies the length of a full phrase of four measures, it may itself be concluded with a brief cadential idea. In such cases, it is important to understand that the structural scope of that cadence is limited to the boundaries of the codetta and does not otherwise affect the processes of cadence that were responsible for closing the theme proper." See also Caplin, "The Classical Cadence: Conceptions and Misconceptions," *Journal of the American Musicological Society* 57/1 (2004), 51–118, at 86–9.

<sup>41</sup> On which subject, see Caplin, *Analyzing Classical Form*, 133–4. Hepokoski and Darcy may call this a 'P<sup>0</sup> module'; see *Elements of Sonata Theory*, 72–3. For a 'ternary' analysis that includes these bars within the main body of the A theme, see Walter Frisch, *Brahms: The Four Symphonies* (New Haven, CN: Yale University Press, 2003), 48.

The music's post-classical aspect resides not in the types it references, but in the interaction of proportion and harmony. Both sentence and period are notably expansive. In the sentence, the statement and response end half-cadentially, the latter admittedly by "reopening" a v: PAC as a i: HC, alluding to what Vande Moortele calls the "large-scale sentence with periodic presentation."<sup>42</sup> The response phrase moreover distends the statement by a bar in order to reach its cadence, thereby unbalancing the presentation's proportions. The sense of asymmetry persists in the continuation, the first unit of which is seven-bars long and closed with a half cadence lending it the character of an antecedent. Bars 57–67<sup>1</sup> extend this model to produce an eleven-bar unit (consequent?); the covered PAC in bars 68–70 consequently rounds off a 29-bar theme. The period that follows is similarly irregular. The antecedent concludes on the downbeat of its ninth bar, producing a 4+5 design, and every aspect of its organization is expanded in the consequent: the basic idea is enlarged through the addition of a two-bar compression of its material in bars 82–3, and the contrasting idea swells by a bar, so that the PAC is reached after twelve bars. In all, the theme group's proportions are 4+29+20 bars, which, allowing for the elision of its functions, produces a 52-bar overall design.

The fact that Brahms does not commence the transition at bar 70, but instead composes a second intra-thematic unit, instantiates a technique I have elsewhere theorized as *proliferation* – the expansion of thematic design, such that intra-thematic levels accumulate within an overarching inter-thematic function.<sup>43</sup> This technique develops out of the classical compound types and techniques of phrase expansion and extension that Caplin identifies; but by the mid-nineteenth century the array of proliferation techniques evident in sonata main themes moves well beyond the explanatory reach of the classical typology.<sup>44</sup> Brahms' Op. 68 is a case in point: a 52-bar introduction+sentence+period compound has no precedent in Caplin's corpus. The proliferative technique is illustrated in Table 11 [insert Table 11 here]. The inter-thematic level consistently enfolds three lower levels rather than two: the formal functions comprising the sentence and the period construct a higher functional level, which is itself half of the A-theme group.

< Table 11: Brahms, Op. 68/i, A theme >

The period's presence mobilizes a second post-classical device. Until we reach the decisive PAC in bars 86–9, the evidence could well imply a transition; we have after all

<sup>42</sup> "In Search of Romantic Form," 412–13. Alluding to Schmalfeldt, Vande Moortele references the main theme in the first movement of Beethoven's "Kreutzer" Sonata.

<sup>43</sup> Horton, "Formal Type and Formal Function in the Post-Classical Piano Concerto," 85–103 and also *Brahms' Piano Concerto No. 2, Op. 83*, 46–8.

<sup>44</sup> On the difference between extension and expansion, see Caplin, *Classical Form*, 20.

experienced an IAC in bar 70, and the subsequent music is developmental in ways that suggest transitional “energy gain,” as Hepokoski and Darcy describe it.<sup>45</sup> It is only with the consequent’s emphatic PAC that this implication is dispelled. In brief, bars 70–89 engage Schmalfeldt’s concept of “becoming,” which I have elsewhere termed *functional transformation*: bars 70–89 comprise a transition, which “becomes” the second half of a compound main theme.<sup>46</sup> Working together, proliferation and functional transformation serve to loosen the A theme’s design, thereby undermining one of Caplin’s essential principles: A-theme/B-theme contrast is no longer a product of the distinction between tight-knit and loose organization, but between different modes of loose organization.<sup>47</sup> This is also clarified in Table 11: the sentence A is followed by a variant, which initially implies TR but “becomes” ( $\Rightarrow$ ) A<sup>1</sup>.

Proliferation is, in part, also a product of chromaticism. In both sentence and period, phrase enlargement is enabled by chromatic modulation, the labour required to return to the tonic serving as a continuation technique that distends intra-thematic functions. This is immediately evident in bars 51–67, as Example 6 reveals. The momentary implication of G flat major in bars 53–5 is picked up and elaborated in bars 59–67, where  $Gb^{4/2}$  supplies the stepping-off point for a shift towards  $C<flat>$ , which in turn slips enharmonically into the orbit of A and ultimately E by bar 67. The cadence is imposed on the phrase by an abrupt hexatonic progression in bars 67–8, which simply replaces V/E with V/C minor. The period consequent is distended by similar means. The expansion of the basic idea leads to a diminished seventh at the start of bar 84, which catapults the music temporarily towards A minor, an impression dispelled by the subsequent chromatic convergence of the outer voices, which pushes through a diminished third chord onto  $V^{6/4}$  of C minor for the ultimate structural cadence. In sum, chromaticism produces enlarged, irregular phrase lengths, which initially facilitate chromatic modulation, but later on traverse the distance from chromatic outpost to tonic cadence.

Brahms’ chromaticism does not endanger the identity of C minor as an underlying tonic. Tonic structural cadences remain in place; chromatic digressions prolongationally “enrich” the tonic, to purloin Dahlhaus’ term.<sup>48</sup> The A-theme group in the first movement of Bruckner’s Symphony No. 8 poses a rather different challenge. As the commentary in

<sup>45</sup> See Hepokoski and Darcy, *Elements of Sonata Theory*, 18.

<sup>46</sup> See for instance, Horton, *Brahms’ Piano Concerto No. 2, Op. 83*, 52–6.

<sup>47</sup> On which subject, see Caplin, *Analyzing Classical Form*, 203–5.

<sup>48</sup> Carl Dahlhaus, *Between Romanticism and Modernism: Four Studies in the Music of the Later Nineteenth Century* trans. Mary Whittall (Berkeley: University of California Press, 1980), 64–71, especially 65: “With the Wagnerian procedure of modulatory sequences, chromatic alteration and the undermining of tonality became the principal characteristics of the harmonic writing, while Brahms’ use of developing variation, with the enrichment of the fundamental bass, preserved tonal integrity.”

Example 7 explains, the whole group appears as an expanded period, in which antecedent and consequent are rhetorically sentential [**insert Example 7 here**].

< Example 7: Bruckner, Symphony No. 8/i, A theme >

The qualification “rhetorically” is important, because a major factor differentiating Bruckner’s practice from both its classical genealogy and Brahms is the nature of harmonic function within the design. The way Bruckner handles cadences is a case in point. Bars 18–22 occupy the rhetorical space of an antecedent cadential function, conveying the rhetoric of closure in several respects. Example 8 however reveals the problem. The pre-dominant conditions for a PAC are established from bar 20, leading into a cadential **6/4** at the start of bar 21. Example 8a shows how this cadence might play out in orthodox circumstances: the soprano falls through **^2** at the end of bar 22 to a hypothetical **^1** at the start of bar 23; and the bass moves to **⓪** at the same point. Example 8b shows what actually happens: the soprano’s cadential descent occurs prematurely over V; the cadential motion disappears into the soprano voice before the bass can catch up. Bar 23 then re-launches the movement’s ambiguous opening F, which now sounds like a subdominant interruption [**insert examples 8a and 8b here**].

< Examples 8a and b: Bruckner, Symphony No. 8/i, A theme, antecedent cadence and its hypothetical resolution >

The consequent’s corresponding music is even more distant from classical practice. The continuation is varied, arriving on V/III in bars 39–40, and the attempted cadence is replaced by a descending 6–10 linear pattern moving by thirds from i through VI to iv, after which the transition takes hold over V of **D<flat>**. A return to C minor again occupies the cadential function’s customary location, but its tonic status is now questioned before any cadence can be attempted, being caught within a sequential modulation. Reverting to Schoenberg, we could explain bars 40–2 as a liquidation, since their thematic currency is the motivic residues of the continuation. There is, however, no cadence, and therefore no closure in Caplin’s terms.

The tonal identity of the F that swallows up the antecedent cadence in bar 23 is also a matter of conjecture, not only because of what happens in bars 24–5, but because of its corresponding harmonic obscurity in bars 1–4. And this broaches another theoretical problem: despite their sentential rhetoric, bars 1–17 shirk almost all of the harmonic responsibilities that presentation and continuation would undertake in a classical sentence. The statement treats C as its endpoint, arrived at obliquely via the notoriously ambiguous material in bars 1–

4 (see now the bracket beneath these bars in Example 7), which morphs from a dominant preparation of **B<flat>** minor into a putative **D<flat>** major, before sliding onto the tonic via a Phrygian progression. Once attained, this tonic is highly provisional. Its modally defining third is absent until the start of the response; and the closest it gets to dominant support is the G minor harmony implied in bar 8. The consequent statement and response in bars 22–33 at least benefit retrospectively from the thwarted tonic PAC in bars 20–2. The basic ambiguities nevertheless persist, and are if anything more strenuously asserted, given the *fortissimo* dynamic and full orchestral texture.

The continuation phrases are no more tractable. In rhetorical terms, the role bars 9–17 perform is transparent: each of the two units treats the statement's material in loose ascending sequence. As the attempt to squeeze the harmony into a Roman-numeral analysis in Example 7 establishes, however, this sequence does not build upon an initial tonic premise: the progression **Ab minor**<sup>6/3</sup>–**B**<sup>dom.7</sup>–**D#**<sup>dim.7</sup>–**F#**<sup>4/3</sup> means nothing in C minor, and there is little in the statement and response to explain this away as a chromatic digression in the manner of Brahms' continuation phrases in Op. 68. (Schenkerians wishing to rescue the concept of prolongation here by pointing to the circumscribing dominant have to deal with the fact that *v* is expressed as G minor in bar 8, not G major.) The **V**<sup>4/3</sup> chord attained in bar 17 in effect forces the issue of C minor's tonic identity, linking up with the putative tonic in bars 5–7 associatively, by mobilizing the home dominant at a gestural highpoint. The variations introduced into the consequent continuation compound these difficulties (see now the bracket beneath bars 31–9 in Example 7). Bruckner sidesteps the progression to **Ab** minor undertaken in bars 8–9 and moves directly onto **B**<sup>dom.7</sup>, which then proceeds via parsimonious voice leading through **#ii**<sup>dim.7</sup>/V and *ii*<sup>7</sup> onto V/III. These variations reinforce the difficulty of affiliating continuation and prolongation, because the coordination of highpoint, dominant arrival and the initiation of a cadence is now completely abandoned.

Nothing in Caplin's work prepares us for this environment. We can't regard statement, response, and continuation as prolongational, because it is impossible to determine what is being prolonged.<sup>49</sup> Retrospectively, we might accord C privileged status, but this is conferred by the failed cadential efforts of bars 20–2, not by an omnipresent tonic premise, around which all other harmonic events are orientated. The association of cadence and phrase ending is also questioned, which means that the harmonic syntax underpinning Caplin's beginning–middle–end paradigm starts to unravel. Neither can the music's harmonic provisionality be understood as evidencing a process of “becoming,” because there is no

<sup>49</sup> In an attempt to deal with this problem, William Benjamin proposes a “double, and competing prolongation in bars 1–17, which cannot be reduced to a single harmony, or said to affiliate to a single tonic at every level, without falsifying its meaning.” See “Tonal Dualism in Bruckner's Eighth Symphony,” in William Kinderman and Harald Krebs (eds.), *The Second Practice of Nineteenth-Century Tonality* (Lincoln, NB: University of Nebraska Press, 1996), 237–58, at 249.

confirmed structural downbeat that forces retrospective reinterpretation. In form-functional terms, what you see is what you get.

The challenge lies in reformulating the relationship between rhetoric and harmonic syntax, so that an A-theme function can be understood in the absence of a governing tonal premise. To this end, Example 9 presents a voice-leading analysis, overlaid with a reassessed set of syntactic principles [insert Example 9 here].<sup>50</sup>

< Example 9: Bruckner, Symphony No. 8/i, A theme, reduction showing reassessed formal functions >

Above all, we have to regard tonic identity as contested within a harmonic field, not asserted as a premise. The specific composition of each field changes in line with form-functional rhetoric, which means that the theme's architecture remains recognizably classical; the harmonic tasks the music performs at each stage are however fundamentally rethought. Thus the statement and response in the antecedent and consequent do not establish a tonic premise, but set up an immediate tonal dialectic, which places C minor as premise in direct conflict with **D<flat>** as a counter-premise (box 1 in Example 9, reasserted in the consequent, box 4).<sup>51</sup> In short, the function of statement and response is the presentation of an antithesis, not a thesis. The continuation preserves a sentential process as Schoenberg understood it, subjecting the initial material to a process of directed motivic change. Yet the continuation's harmonic function is to establish a model of chromatic-tonal progression as an agent of *intensification*, not *prolongation* (box 2). Neo-Riemannian theory allows us to grasp this progression without insinuating prolongation. Example 9's analytical commentary explains the progression in bars 9–17 in these terms, as SLIDE 3 (G-, **Ab-**), R (**Ab-**, B+), D (B+, **F#+**), SLIDE 2 (**F#+**, G+).<sup>52</sup> As the beams explain, the progression is coherent by virtue of its voice

<sup>50</sup> A more radical representation of the music would distribute the music across three disjunct tonal orbits – C, D flat and B – rather than ramify them into the overall premise of C minor. For an analysis of the Finale of Bruckner's Symphony No. 7 along these lines, see Julian Horton, "Form and Orbital Tonality in the Finale of Bruckner's Seventh Symphony", *Music Analysis* (forthcoming).

<sup>51</sup> Attempts to account for the harmonic vocabulary of this work include Paul Dawson-Bowling, "Thematic and Tonal Unity in Bruckner's Eighth Symphony," *Music Review* 30 (1969), 19–30, Benjamin, "Tonal Dualism in Bruckner's Eighth Symphony," Benjamin Korstvedt, *Bruckner: Symphony No. 8* (Cambridge: Cambridge University Press, 2000), Anthony F. Carver, "Bruckner and the Phrygian Mode," *Music and Letters* 86/1 (2005), 74–99, and Miguel J. Ramirez, "Chromatic Third Relations in the Music of Bruckner: A Neo-Riemannian Perspective," *Music Analysis* 32/2 (2013), 155–209. Benjamin hears a dualism of **D<flat>** and C minor; Carver (98) reads the opening as a succession of two Phrygian modes on F and C respectively.

<sup>52</sup> I use transformational labels in conventionally neo-Riemannian ways: R=relative (minor-third transformation); D=dominant; P=parallel, or mode switch over a common root; L=*Leittonwechselklang* (major-third transformation). I have broadened David Lewin's definition of SLIDE here to include semitonally adjacent triads, in four classes: SLIDE 1 describes semitonally adjacent triads with a common third (major to minor ascending; minor to major descending); SLIDE 2 describes semitonally adjacent major triads (ascending and descending); SLIDE 3 describes semitonally adjacent minor triads

leading: the soprano ascends chromatically from G to B; the bass supports this with a semitonal ascent from **Bb** to D. In the consequent, this smooth voice leading is disrupted (box 4): the soprano ascends from B to D, but has to traverse a tone in order to get from ii to V/III. The sequence of transformations is now PLP (G-, B+) and then an application of P and R, mediated by a diminished seventh; or, alternatively, a hexatonic co-cycle, followed by an octatonic progression.<sup>53</sup>

The final unit of the antecedent sentence (box 3) has three functions: first, to reassert C minor as premise, by recovering diatonic syntax; second, to imply but ultimately withhold synthesis, by setting in motion a cadential confirmation of C minor, which fails to take hold. In the consequent's final unit (box 6), the first of these functions is retained (C minor is asserted as a premise), but the second is withheld, because the phrase is used to modulate. In both end functions, the thematic process still enacts motivic liquidation; however, we now need to accept that liquidation can convey the termination of a theme in the absence of a cadence.

The problems of treating classical practice as the regulative basis for analysis in this repertoire are magnified when we relate these designs to their large-scale formal contexts. In Brahms' case, the key factor is, as Dahlhaus avers, the overriding force of developing variation.<sup>54</sup> Example 10 explains the core motivic relationships between A, B and C themes in the first movement of Op. 68 [**insert Example 10 here**].

< Example 10: Brahms, Op. 68/I, exposition, treatment of A material in B and C >

The themes initiated at bars 121 and 161 have contrasted formal functions, but participate in one continuous motivic process. Both unlock contrapuntal properties of the A theme itself, whilst also generating new motive forms; crucial to this is the fact that A is, as several commentators have noted, a complex of two contrapuntally related themes, called a1 and a2 in Example 7.<sup>55</sup> Bars 121–30 make this material perform two tasks. First, its invertibility is freshly exploited: a1 is now transferred below a2. Second, the chromatic figure

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(ascending and descending); SLIDE 4 describes ascending semitonal motion from minor to major triads. Lewin intends only triadic relations in which the third remains static and the root and fifth move by semitone; see David Lewin, *Generalized Musical Intervals and Transformations* (repr. New York and Oxford: Oxford University Press, 2007), 178.

<sup>53</sup> These terms as conceived by Richard Cohn in *Audacious Euphony: Chromaticism and the Triad's Second Nature* (Oxford and New York: Oxford University Press, 2012) and "Maximally Smooth Cycles, Hexatonic Systems and the Analysis of Late-Romantic Triadic Progressions," *Music Analysis* 51/1 (1996), 9–40.

<sup>54</sup> Dahlhaus, *Between Romanticism and Modernism*, 50.

<sup>55</sup> See David Brodbeck, *Brahms: Symphony No. 1, Op. 68* (Cambridge: Cambridge University Press, 1997), 34–5, Giseller Schubert, "Themes and Double Themes: The Problem of the Symphonic in Brahms," *19th-Century Music* 18 (1994), 10–23 and Julian Horton, "Brahms, Bruckner and the Concept of Thematic Process," in Gareth Cox and Julian Horton (eds.), *Irish Musical Studies*, vol. 11: *Irish Musical Analysis* (Dublin: Four Courts Press, 2014), 78–105, and especially 82–95.



described as a1.1 in Example 10 is inverted, even though a2 persists *rectus* after it is transferred to the soprano in bar 125. This treatment is taken a stage further in the closing theme. The ostensibly new quaver motive introduced in bars 157–60 is revealed in bars 161–3 as a diminution elaborating a1.1, and this altogether serves as a counterpoint to the inversion of a2, introduced at bar 161 in the bass. As if to reinforce the association between invertibility and inversion, this whole complex is then treated permutationally: the inversion of a2 moves to the soprano; the elaboration of a1.1 transfers to the bass.

The critical issue here is the shifting hierarchical interaction of development and formal function. Having generated a A-theme group, a1 and a2 then participate in a process that overarches the exposition's formal functions, creating a motivic continuity, to which inter-thematic functions are subservient. This sense of continuity is enhanced by Brahms' refusal to calibrate inter-thematic functions and arrival in the bass progression, a feature summarized in Example 11 [insert Example 11 here]. The B theme enters over  $\text{III}^{6/3}$ , not  $\text{III}^{5/3}$ , and as the group develops, progression to a PAC is constantly frustrated. The first point of closure is the III:HC in bars 127–30, yet no more decisive cadence is offered in  $\text{E}<\text{flat}>$  major;  $\text{III}^{6/3}$  is regained at bar 148, but no expanded cadential progression is then forthcoming. Instead,  $\text{III}^{6/3}$  decays to  $\text{iii}^{6/3}$  in bar 155, and the progression into the closing theme descends through  $\text{V}^9/\text{V}$  to  $\text{i}$  in  $\text{E}<\text{flat}>$  minor without cadential intervention (bars 157–60). In fact, between the end of the A theme and the end of the exposition, there is only one authentic cadence, the expanded  $\text{iii}:\text{PAC}$  and its repetition in bars 177–85, which means that the entire form-functional design of TR, B and C is suspended over an active bass progression. When the cadence finally occurs, the exposition is over: the codetta in bars 185–8 is too brief to be regarded as a self-sufficient closing section.

< Example 11: Brahms, Op. 68/i, exposition, bass diagram >

In Bruckner's Symphony No. 8, the difficulties of classical orientation surface most urgently when we try to locate the recapitulation. The B-theme return is unambiguous, entering in the relative major at bar 311, albeit over a  $6/4$  chord; signals for the A-theme reprise are however dispersed across 78 bars, and no candidate is clearly preferable. The first putative return, quoted in Example 12, occurs at bar 225, where the main theme reappears at pitch in the bass, albeit in augmentation [insert Example 12 here]. The non-tonic harmony at this point is offset by the fact that the phrase leans dramatically on its final bar, which optimistically celebrates C major as a point of arrival. More problematic is what happens next: bars 235–44 are treated not as an opportunity to retrieve the syntax of bars 1–22, but as the model for a sequence ascending by third, which by bar 239 has displaced C major's assertion with an equally triumphal  $\text{E}<\text{flat}>$ . And all of this is overshadowed by the

cataclysmic events of bars 245–9, which round off the sequence by interpreting the theme's final chromatic fall as the bass of a VI– $\text{i}^{6/4}$  progression in C minor. In short, the putative recapitulation in bar 225 is engulfed by development. In a reversal of Schmalfeldt's idea of becoming, a potential recapitulation regresses into development in the subsequent bars, producing the formulation A-theme recapitulation $\Leftarrow$ development.

< Example 12: Bruckner, Symphony No. 8/i, potential A recapitulations >

With the  $\text{i}^{6/4}$  at bar 249 (see Example 12), a second possible recapitulation is reached. This is categorically a point of arrival, and announces the most forceful attempt to establish C minor thus far. Yet if this event supplies what bars 225–48 lack, then bars 225–48 furnish what bar 249 cannot provide: the recapitulation at 225 is thematic, but not tonal; the recapitulation at 249 is tonal, but not thematic. Bars 225–49 separate out the parametric constituents of a recapitulation (thematic identity; tonality) and place them in opposition: the thematic return is undermined by its harmonic mobility; the tonal return is undermined by its thematic anonymity (note that in the aftermath of bar 249, the main theme is reduced to its rhythm alone). The subsequent music engineers a second regression into A-theme development, cast as a sequential recovery of its interval character peaking in bars 271–8. In place of a stable A-theme return, Bruckner has now composed two waves of form-functional regression: thematic recapitulation $\Leftarrow$ development; tonal recapitulation $\Leftarrow$ development.<sup>56</sup>

From bar 282, a third and final recapitulatory attempt begins, spanning 282–303 (see Example 12). This music retrieves the theme's form-functional design, comprising a reprise of the antecedent sentence. It is, however, more tonally oblique than bar 225, commencing over V of  $\text{D}^{<\text{flat}>}$ , and thereby isolating the second of the two centers derived from the A theme's expositional tonal dialectic. C minor is only recovered at the cadence from bar 297, and then via the abrupt resolution of a half-diminished seventh on  $\text{D}^\#$  to  $\text{V}^{4/3}$  of C. This cadence is, in turn, undercut by  $\text{Eb}$  minor<sup>6-3</sup>, and the transition follows. This passage supplies a further element missing at bars 225 and 249: 225 is a thematic reprise at pitch; 249 is a tonal reprise; 282 is a syntactic reprise.

These three parameters habitually align in a classical recapitulation; or if not, then their misalignment infrequently entails such far-flung dispersal of features, which serve as recapitulatory signifiers within their respective parameters. This dispersal responds to the A theme's inherent problematic, which by its very nature resists stable re-presentation. Parametric separation exposes the difficulty: bar 225's reprise at pitch fails because A is not

<sup>56</sup> The notion of wave form in Bruckner references Ernst Kurth, *Bruckner*, 2 vols (Berlin: Max Hesse Verlag, 1925) and see also Stephen Parkany, "Kurth's *Bruckner* and the Adagio of the Seventh Symphony," *19th-Century Music* 11 (1988), 262–81.

tonally stable; bar 249's reprise of C minor fails because A's melodic identity has to be abandoned to achieve it. Bars 282–303 consequently mark a change of formal tactics. Their tonal instability encourages a developmental reading, which is only dispelled when the thwarted C minor cadence is initiated at bar 297. If bars 225–81 twice regress from recapitulation to development, then bars 282–303 transform development into recapitulation, completing the triple succession thematic recapitulation $\Leftarrow$ development; tonal recapitulation $\Leftarrow$ development; development $\Rightarrow$ form-functional recapitulation.

Highly distinctive though these two examples are, their common ground is the tendency to allow A-theme properties to control larger formal strategies. In Brahms' case, this imperative is primarily motivic, although its consequences are structural. The proliferation techniques evident in his A-theme group accommodate an unusual degree of contrapuntal-motivic density, the implications of which compel the exposition's overarching continuities, to the detriment of classical formal markers. The density of Bruckner's theme arises from its tonal rather than motivic characteristics, but he faces the same challenge of how these properties can be harnessed to construct a sonata strategy. The difficulty is more extreme for Bruckner, because his theme's harmonic ambiguities convert the recapitulation into a formal aporia rather than a locus of resolution. His solution is radical in kind: in place of tonal and syntactic stabilization, he exploits the A theme's tonal dialectic as a centrifugal force, which prisms apart the theme's parameters and scatters them across the ongoing developmental action.

No approach committed to the “negative” mentality Vande Moortele diagnoses can adequately capture these strategies. Properly speaking, they are not misprisions (“deformations”) of classical norms, but generative techniques traceable to the wholly unsurprising fact that Bruckner and Brahms construct themes in ways that move beyond late-eighteenth-century precedents. The observation of a modified classical technique underneath this has minimal explanatory force: it cannot account for the music's formal strategy, except in the trivial sense of revealing that tonal syntax in 1860–1890 differs from tonal syntax in 1760–1790. The crucial point of Brahms' evasion of a III:PAC or Bruckner's A-theme reprise over V of **D<flat>** is not the act of misreading they embody, so much as the strategy to which they contribute. The virtue of Vande Moortele's “positive” approach is that it allows us to connect material and form in ways that are strategically efficacious: by understanding nineteenth-century syntax, we understand nineteenth-century form.

### **Conclusions: Beyond Sonata Norms**

Every year, the people of Southern Jutland in Denmark are treated to an extraordinary natural display, as millions of starlings gather in the skies and perform breathtaking feats of aerial acrobatics. The birds fly in apparent synchrony, creating spiralling patterns in the air. This

avian spectacle naturally implies a governing intelligence: surely the near-identical movement of so many individuals in such a spontaneous way bespeaks a higher-order system, to which all the birds refer, or at least a social hierarchy, which accords primacy to one individual, whom all the others mimic.

Actually, as behavioural science now well understands, such large-scale patterning arises without the need for any top-down organization at all. Starling murmurations are examples of complex dynamical systems exhibiting “scale-free correlation.”<sup>57</sup> The interaction of individuals, who respond locally to each other’s movements, produces duplications, which spread throughout the population until some external factor (“noise” in the system) causes the pattern to break down. The repetition of movements, or “correlation” between the birds, is “scale-free,” because its extent is typically limited only by the population’s size, a characteristic that confers a rare pedigree on the phenomenon. Remarkably, it is only necessary for a very small number of birds to interact for correlation across the entire population to occur: the overlapping interaction of small cells of starlings creates overarching patterns, which no single cell comprehends.

Starling murmurations offer a useful analogy through which to understand the development of sonata form. Their fundamental lesson is that commonly understood systems of norms are not a prerequisite for large-scale behavioural patterning: the fact that we observe duplicated procedures in a corpus does not mean that they arise because all participants refer to the same governing model. The presence of commonality does not necessarily demonstrate such a model’s existence; neither can it be inferred by aggregating the corpus’ evidence. What we explain *a posteriori* as sonata form is a taxonomy, after the event, of properties that may well be duplicated as a result of interaction, but which spread throughout the corpus by correlation. In other words, composers do not need to grasp a formal universal in order for their music to share a property with thousands of contemporaneous, prior, and subsequent works; they only need to be aware of that property’s presence in a proximate sample of works, and that awareness needs to be replicated by a certain number of other composers whose spheres of experience overlap, for such interaction to produce widespread correlation, including between examples that have no historically verifiable relationship. We can of course classify the extent and nature of such correlations via empirical research and explain what they mean for individual works through analysis; this, indeed, is the principal duty of *Formenlehre*. If we choose to, we can also aggregate properties and distil them into ideal types, in order to facilitate analytical discourse. But none of this proves the existence of

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<sup>57</sup> On which subject, see Andrea Cavagna, Alessio Cimorelli, Irene Giardina, Giorgio Parisi, Raffaele Santagati, Fabio Stefanini, and Massimiliano Viale, “Scale-Free Correlations in Starling Flocks,” *Proceedings of the National Academy of Sciences of the United States of America* 107/26 (2010), 11865–70.

norms, with which all composers knowingly converse. Such taxonomy is an *ex post facto* intellectual intervention, not a description of how composers behave.

I want, by way of conclusion, to distill these various reflections into three basic propositions, which I offer as a framework for *Formenlehre*. Primarily, I hold that any theory of sonata form is *always ultimately empirical*: its assertions begin and end with its corpus of evidence, which means that it is in essence *deductive* and must be subject to *criteria of falsifiability*. Given the plurality of corpora and criteria determining their creation, there are consequently no generalized sonata norms standing above all corpora; indeed there is no definitive, unitary sonata theory, understood as a body of inductive propositions that can be derived empirically and applied analytically. Rather, there is a multiplicity of theories, each of which tells the deductive story of a given corpus, which is selected inductively on the basis of more-or-less plausible but essentially mutable historical grounds. In other words, formal theory is *micro-historical*; and there are as many micro-histories as there are possible corpora or segmentations of the repertoire. It is consequently speculative to characterize compositional practices as anything other than relatively prevalent habits evident in a corpus.

Second, although the relationships between classical and Romantic practice is manifestly important, there is no conclusive reason to maintain the dominance of classical sonata forms in our theoretical and analytical discourse. The idea of a perfected sonata-type repertoire centred on Haydn, Mozart, and Beethoven is critical to our understanding of that music's reception, but neither this nor the subsequent accretion of classically orientated theory should confer privilege on the Viennese classical corpus as a heuristic against which all practice is measured. There is virtue in the construction of theories, which are multi-perspectival – that is, the geographical and historical orientation of which can be shifted and contrasted. The true diversity of nineteenth-century sonata practice will never be appreciated until *Formenlehre* divests itself of its monocular Viennese-classical focus and constructs its corpora in a more historically flexible way.

Lastly, any theory of nineteenth-century sonata form seeking to escape from the Classical centre's gravitational pull needs to accommodate the changing conditions of tonality and the generative relationship between material and form, as well as the evolution of form-functional habits, if it is to have analytical utility. Despite formal theory's empirical character, it should nevertheless account for the influence of systemic change on musical practice, which is manifest primarily in the interaction of harmony and syntax on the small scale, and of form and tonality on the large scale. The theorist's pressing tasks in approaching the evidence of a given corpus are therefore to establish the systemic conditions of its intra-thematic syntax, and to formulate a methodology, which allows us to relate syntax and formal strategy.

# Criteria for a Theory of Nineteenth-Century Sonata Form

Julian Horton

## Examples

### EXAMPLE 1

Beethoven, Op. 110/i, exposition, MC and start of B

TR

25

*p* *cresc.* *sf* *f*

B

E♭ I<sup>6</sup><sub>3</sub> V<sup>6</sup><sub>3</sub> 5<sub>3</sub> 4<sub>2</sub> 6<sub>4</sub> I

linear descent

29

*sf* *sf* etc.

The musical score is for Beethoven's Op. 110/i, exposition, MC and start of B. It is in 3/4 time and E-flat major. The score shows measures 25 to 29. Measure 25 starts with a piano (p) dynamic and a crescendo (cresc.) marking. The melody in the right hand is marked with a trill (TR) and a crescendo. The bass line has a trill (tr) and a crescendo. Measure 26 has a piano (p) dynamic and a crescendo (cresc.) marking. Measure 27 has a piano (p) dynamic and a crescendo (cresc.) marking. Measure 28 has a piano (p) dynamic and a crescendo (cresc.) marking. Measure 29 has a piano (p) dynamic and a crescendo (cresc.) marking. The score ends with 'etc.'.

EXAMPLE 2

Schubert, D. 956/i, exposition, MC and start of B

TR

57

*f*

*fp* *decresc.*

*fp* *decresc.*

I: HC MC

B

*pp* *pizz.*

*pp*

MC evaded (♭III)

etc.

EXAMPLE 3

Schubert, D. 36/i, exposition, MC and start of B

53 TR

modulating expanded fill

*p*

ii: HC MC

59 *dolce*

*decresc.*

*pp*

*dolce*

B

pizz.

FV<sup>7</sup> I



EXAMPLE 4

Mendelssohn, Op. 44, No. 2/i, exposition, MC and start of B

TR

46

dim.

v: HC

49

dim.

dim.

Standing on V

52

B

pp

pp

dim.

VI

G-I

EXAMPLE 5

Brahms, Op. 120, No. 2/i, exposition, MC and start of B

19 TR

Clarinet in B $\flat$

Piano

dim.

dim.

B $\flat$ Ger<sup>6</sup>

21 B

Cl.

Pno.

*p* *sotto voce*

*p* *sotto voce*

MC

I

# Horton, 'Criteria for a Theory of Nineteenth-Century Sonata Form', Examples

## EXAMPLE 6

### Brahms, Op. 86/i, exposition, A theme

A theme  
thematic introduction

38 *Allegro*  
*f* *ff*

sentence  
statement

a2

response

a1.1

a1

PAC (covered)

48

continuation  
unit 1 (antecedent character?)

unit 2 (consequent?)

vPAC becomes iHC

G♭V<sup>4</sup><sub>2</sub>

HC

59

extension

cadence

period  
antecedent  
basic idea

*pesante*  
*piu f*

*ff* *ff* *p*

C♭V<sup>4</sup><sub>2</sub> I<sup>6</sup><sub>3</sub> 2 F♭I<sup>6</sup><sub>2</sub> 5 A-V<sup>4</sup><sub>2</sub> I<sup>6</sup><sub>3</sub> 3 V/V cV i  
E-V hexatonic covered PAC

contrasting idea

consequent  
basic idea expanded

71

*cresc.* *f* *sf* *f*

IAC

contrasting idea expanded

81

*ff*

a<sup>6</sup><sub>4</sub> VI civ dim. 3 V<sup>6</sup><sub>4</sub> 5 i  
PAC

# Horton, 'Criteria for a Theory of Nineteenth-Century Sonata Form', Examples

## EXAMPLE 7

### Bruckner, Symphony No. 8/i, A theme

A theme  
antecedent  
statement

Allegro moderato

*pp*

*p cresc.*

response

*cresc.*

*pp*  $\flat b^{\flat} V$   $D^{\flat} I$   $ci$

continuation

*mf*

*cresc. sempre*

$\sharp VII^7$   $\sharp ii^4_2$   $\sharp V^4_3$   $V^4_3$

cadential? (liquidation)

consequent statement

*dim.* *p dim.* *ff*

response

continuation

*ff* *dim.* *p* *mf*

$v$   $6_3$   $\sharp VII^7$   $5_6$

liquidation (no cadence)

*mf marc.* *cresc. sempre* *f*

$\sharp ii^4_2$   $ii^7$   $VII^7$

TR follows

*ff* *dim.* *p*

EXAMPLES 8a and 8b

Bruckner, Symphony No. 8/i, A theme, antecedent cadence and its hypothetical resolution

a: hypothetical:

20

*dim.*

*p dim.*

i:PAC

b: actual:

20

*dim.*

*p dim.*

!

EXAMPLE 9

Bruckner, Symphony No. 8/i, A theme, reduction showing reassessed formal functions

1  
1. antithesis  
statement response

11  
2. progression (intensification)  
continuation

18  
3. synthesis (failed)  
cadence (attempted)

23  
4. antithesis (reasserted)  
statement response

33  
5. progression (intensification)  
continuation

40  
6. liquidation (modulation; no cadence; becomes transitional)

SLIDE 3 R (octatonic) D SLIDE 2

civ V

PLP (hexatonic: G-, B7) octatonic (B7, D half dim.)

E<sub>xii</sub><sup>7</sup> V

6 10 6 10 6 10

c:V<sub>3</sub><sup>6</sup> i V VI f:V<sub>3</sub><sup>6</sup> i D<sub>9</sub>:V<sub>3</sub><sup>6</sup>

The image displays a musical score reduction of the A theme from Bruckner's Symphony No. 8, first movement. The score is divided into six sections, each with a number and a description of its formal function. The notation includes treble and bass staves with various musical symbols such as notes, rests, and accidentals. Key harmonic features are labeled, including 'SLIDE 3 R (octatonic)', 'D SLIDE 2', 'PLP (hexatonic: G-, B7)', 'octatonic (B7, D half dim.)', and 'E<sub>xii</sub><sup>7</sup>'. The bottom section (6. liquidation) includes a series of numbers (6, 10, 6, 10, 6, 10) and a sequence of chords: c:V<sub>3</sub><sup>6</sup>, i, V, VI, f:V<sub>3</sub><sup>6</sup>, i, and D<sub>9</sub>:V<sub>3</sub><sup>6</sup>. The score is presented in a clean, academic style with a white background and black notation.

EXAMPLE 10

Brahms, Op. 86/i, exposition, treatment of A material in B and C

B  
presentation

121

*p espr.*

*cresc.*

*f*

*p*

*p dolce*

a1.1

a2

a1.1 inverted

a2

etc.

C  
statement

161

*ff*

*sf*

*sf*

*ff*

a1.1

a2 inverted

response

expanded cadential progression follows

170

a1.1

*ff agitato*

### EXAMPLE 11

Brahms, Op. 86/i, exposition, bass diagram



# Horton, 'Criteria for a Theory of Nineteenth-Century Sonata Form', Examples

## EXAMPLE 12

### Bruckner, Symphony No. 8/i, potential A recapitulations

1. thematic reprise (A returns at pitch)

225

*fff*

3

3

3

3

...

2. tonal reprise (tonic 6-4)

245

*fff*

3

*pp*

3

*pp*

A (rhythm alone)

VI

*pp*

3. syntactic reprise (A-theme formal functions return)

statement

254

283

response

*mf* hervortretend

*mf* hervortretend

*p*

*p*

DxV

continuation

290

*mf*

3

*mf* cresc. sempre

3

cadence (deceptive)

297

*f*

3

*f*

3

*mf* dim.

3

*p*

3

V of C minor regained

*p* iv

V

iii<sup>5</sup><sub>3</sub> — 6

# Criteria for a Theory of Nineteenth-Century Sonata Form

Julian Horton

## Tables

TABLE 1  
Sonata theory's hierarchy of medial caesurae

Level:	Type:
First-level default:	V: HC MC (major); III or v: HC MC (minor)
Second-level default:	I: HC MC; i: HC MC (minor)
Third-level default:	V: PAC MC
Fourth-level default:	I: PAC MC
Deformations:	Declined MC; blocked MC; MC in non-standard key; MC over chord inversion; etc.

TABLE 2  
Corpus

Composer	Works:	Totals:
Beethoven:	piano trios Op. 1 (3); piano sonatas Op. 2 (3); Quintet Op. 4; cello sonatas Op. 5 (2); Piano Sonata Op. 7; string trios Op. 9 (3); piano sonatas Op. 10 (3); Clarinet Trio Op. 11; violin sonatas Op. 12 (3); Piano Sonata Op. 13; piano sonatas Op. 14 (2); Quintet Op. 16; Horn Sonata Op. 17; string quartets Op. 18 (6); Septet Op. 20; Piano Sonata Op. 22; Violin Sonata Op. 23; Violin Sonata Op. 24; Piano Sonata Op. 28; Quintet Op. 29; violin sonatas Op. 30 (3); piano sonatas Op. 31 (3); Violin Sonata Op. 47; piano sonatas Op. 49 (2); Piano Sonata Op. 53; Piano Sonata Op. 57; string quartets Op. 59 (3); Cello Sonata Op. 69; piano trios Op. 70 (2); Sextet Op. 71; String Quartet Op. 74; Piano Sonata Op. 78; Piano Sonata Op. 79; Piano Sonata Op. 81a; Sextet Op. 81b; Trio Op. 87; Piano Sonata Op. 90; String Quartet Op. 95; Violin Sonata Op. 96; Piano Trio Op. 97; Piano Sonata Op. 101; cello sonatas Op. 102 (2); Piano Sonata Op. 106; Piano Sonata Op. 109; Piano Sonata Op. 110; Piano Sonata Op. 111; String Quartet Op. 127; String Quartet Op. 130; String Quartet Op. 132; String Quartet Op. 135.	
Schubert:	String Quartet D. 18; String Quartet D. 32; String Quartet D. 36; String Quartet D. 46; String Quartet D. 68; String Quartet D. 74; String Quartet D. 87; String Quartet D. 94; String Quartet D. 112; Piano Sonata D. 157; String Quartet D. 173; Piano Sonata D. 279; String Quartet D. 353; Violin Sonata D. 384; Violin Sonata D. 385; Violin Sonata D. 408; Piano Sonata D. 459; Piano Sonata D. 537; Piano Sonata D. 557; Piano Sonata D. 566; Piano Sonata D. 568; Piano Sonata D. 571; Violin Sonata D. 574; Piano Sonata D. 575; Piano Sonata D. 613; Duo Sonata D. 617; Piano Sonata D. 625; Piano Sonata D. 664; Piano Quintet D. 667; 'Quartettsatz' D. 703; Piano Sonata D. 784; Octet D. 803; String Quartet D. 804; String Quartet D. 810; Grand Duo, D. 812; 'Arpeggione' Sonata D. 821; Piano Sonata D. 840; Piano Sonata D. 845; Piano Sonata D. 850; String Quartet D. 887; Piano Sonata D. 894; Piano Trio D. 898; Piano Trio D. 929; Allegro D. 947; String Quintet D. 956; Piano Sonata D. 958; Piano Sonata D. 959; Piano Sonata D. 960.	
Mendelssohn:	Piano Quartet Op. 1; Piano Quartet Op. 2; Piano Quartet Op. 3; Violin Sonata Op. 4; Piano Sonata Op. 6; String Quartet Op. 12; String Quartet Op. 13; String Quintet Op. 18; Octet Op. 20; string quartets Op. 44 (3); Cello Sonata Op. 45; Piano Trio Op. 49; Cello Sonata Op. 58; Piano Trio Op. 66; String Quartet Op. 80; String Quintet Op. 87; Piano Sonata op. 105; Piano Sonata Op. 106; Sextet Op. 110; Viola Sonata (c); Clarinet Sonata (Eb); String Quartet (Eb); Violin Sonata (F).	
Brahms:	Piano Sonata Op. 1; Piano Sonata Op. 2; Piano Sonata Op. 5; Piano Trio Op. 8; Sextet Op. 18; Piano Quartet Op. 25; Piano Quartet Op. 26; Piano Quintet Op. 34; Sextet Op. 36; Cello Sonata Op. 38; string quartets Op. 51 (2); Piano Quartet Op. 60; String Quartet Op. 67; Violin Sonata Op. 78; Piano Trio Op. 87; String Quintet Op. 88; Cello Sonata Op. 99; Violin Sonata Op. 100; Piano Trio Op. 101; Violin Sonata Op. 108; String Quintet Op. 111; Clarinet Trio Op. 114; Clarinet Quintet Op. 115; clarinet/viola sonatas Op. 120 (2)..	
<b>Total:</b>	<b>173 (196 MCs)</b>	

TABLE 3  
Glossary of terms

<b>Term:</b>	<b>Meaning:</b>
MC	Medial caesura
PAC	Perfect authentic cadence
IAC	Imperfect authentic cadence
HC	Half cadence
PC	Plagal cadence
IC	Interrupted cadence
TMB	Tri-modular block (exposition containing two medial caesurae: TMB1 and TMB2)
A	Main theme
B	Subordinate theme
TR	Transition
↔	Elision of functions (TR↔B)
↗	Functional transformation ('becoming')

TABLE 4

Beethoven: totals for each MC category (74 movements; 82 MCs; 1792–1826)

V: HC MC	I: HC MC	V: PAC MC	I: PAC MC	III: HC MC/ v:HC MC (minor mode)	Cont. expo.	Other (‘deformations’)
Op. 1, No. 1	Op. 2, No. 3 (TMB1)	Op. 7 (TMB2)	-	Op. 1, No. 3	Op. 78	Op. 2, No. 1*
Op. 1, No. 2	Op. 4	Op. 10, No. 3 (TMB2)		Op. 5, No. 2	Op. 79	Op. 9, No. 3 (TMB1 and 2)*
Op. 2, No. 2	Op. 5, No. 1			Op. 10, No. 1	Op. 101	Op. 10, No. 2 (TMB1)
Op. 2, No. 3 (TMB2)	Op. 6			Op. 18, No. 4	Op. 102, No. 1	Op. 10, No. 3 (TMB1)
Op. 7 (TMB1)	Op. 11			Op. 23	Op. 135	Op. 12, No. 2
Op. 9, No. 1	Op. 17			Op. 30, No. 2		Op. 13*
Op. 9, No. 2	Op. 18, No. 5			Op. 31, No. 2		Op. 18, No. 3
Op. 10, No. 2 (TMB2)	Op. 20			Op. 47		Op. 29
Op. 12, No. 1	Op. 24 (TMB1)			Op. 49, No. 1		Op. 30, No. 1
Op. 12, No. 3	Op. 49, No. 2			Op. 57*		Op. 31, No. 1
Op. 14, No. 1	Op. 71					Op. 53
Op. 14, No. 2	Op. 87					Op. 59, No. 2*
Op. 16						Op. 70, No. 1
Op. 18, No. 1						Op. 81a
Op. 18, No. 2						Op. 90*
Op. 18, No. 6						Op. 95*
Op. 22						Op. 97
Op. 24 (TMB2)						Op. 102, No. 2
Op. 28						Op. 106
Op. 30, No. 3						Op. 109
Op. 31, No. 3						Op. 110
Op. 59, No. 1						Op. 111*
Op. 59, No. 3						Op. 127
Op. 69						Op. 130
Op. 70, No. 2						Op. 132*
Op. 74						
Op. 81b						
Op. 96						
<b>Total:</b>	<b>28 (34.15%)</b>	<b>12 (14.64%)</b>	<b>0</b>	<b>10 (12.2%)</b>	<b>5 (6.1%)</b>	<b>25 (30.5%)</b>

TABLE 5

Schubert: totals for each MC category (47 movements; 49 MCs; 1810–1828)

V: HC MC	I: HC MC	V: PAC MC	I: PAC MC	III: HC MC/v: HC MC (minor mode)	Cont. expo.	Other ('deformations')
D. 87	D. 46 (TMB1)	D. 574	D. 46 (TMB2)	D. 804	D. 32	D. 36
D. 157*	D. 74			D. 810 (TMB1)	D. 664	D. 68
D. 384	D. 94			D. 845		D. 112
D. 557	D. 459			D. 958		D. 173
D. 959	D. 568					D. 279
	D. 840					D. 353
	D. 850					D. 385
						D. 408
						D. 537
						D. 566
						D. 571
						D. 575
						D. 613
						D. 617
						D. 625
						D. 667
						D. 703
						D. 784
						D. 803
						D. 810 (TMB2)
						D. 812
						D. 821
						D. 887
						D. 894
						D. 898
						D. 929
						D. 947
						D. 956
						D. 960
<b>Total:</b>	<b>5 (10.2%)</b>	<b>7 (14.3%)</b>	<b>1 (2.1%)</b>	<b>1 (2.1%)</b>	<b>4 (8.26%)</b>	<b>2 (4.1%)</b>
						<b>29 (59.28%)</b>

TABLE 6

Mendelssohn: totals for each MC category (25 movements; 25 MCs; 1820–1847)

V: HC MC	I: HC MC	V: PAC MC	I: PAC MC	III: HC MC/v: HC MC (minor mode)	Cont. expo.	Other ('deformations')
Op. 6	-	Quartet (Eb)	-	Op. 1	-	Op. 4
Op. 110				Op. 2		Op. 12
Cl.Sonata				Op. 3		Op. 13
Vln Sonata (F)				Op. 49		Op. 18
				Op. 105		Op. 20
						Op. 44, No. 1
						Op. 44, No. 2
						Op. 44, No. 3
						Op. 45
						Op. 58
						Op. 66
						Op. 80
						Op. 87
						Op. 106
						Vla Sonata
<b>Total:</b>	<b>4 (16%)</b>	<b>0</b>	<b>1 (4%)</b>	<b>0</b>	<b>5 (20%)</b>	<b>0</b>
						<b>15 (60%)</b>

TABLE 7

Brahms: totals for each MC category (26 movements; 27 MCs; 1852–1894)

V: HC MC	I: HC MC	V: PAC MC	I: PAC MC	III: HC MC/v: HC MC (minor mode)	Cont. expo.	Other (‘deformations’)
Op. 26	-	-	-	Op. 2	-	Op. 1
Op. 67				Op. 25 (TMB1)		Op. 5
Op. 87				Op. 51, No. 2		Op. 8
Op. 100				Op. 60		Op. 18
Op. 111				Op. 101		Op. 25 (TMB2)
				Op. 108		Op. 34
						Op. 36
						Op. 38
						Op. 51, No. 1
						Op. 78
						Op. 88
						Op. 99
						Op. 114
						Op. 115
						Op. 120, No. 1
						Op. 120, No. 2
<b>Total:</b>	<b>5 (18.52%)</b>	<b>0</b>	<b>0</b>	<b>6 (22.22%)</b>	<b>0</b>	<b>16 (59.26%)</b>



TABLE 8

'Deformation' categories: distribution by category and composer

Category:	1. TR↔B (elided cadence/resolution of preparatory harmony)	2. TR↔B (bass remains active)	3. Non- standard cadence at MC (IAC; PC; IC)	4. MC evaded	5. MC in inversion/over non-standard harmony	6. MC in non- standard key
<b>Beethoven:</b>	Op. 2, No. 1  Op. 9, No. 3 (TMB 1)  Op. 18, No. 3  Op. 70, No. 1 Op. 90 Op. 102, No. 2 Op. 106 Op. 110 Op. 127  Op. 132	Op. 59, No. 2  Op. 109	-	Op. 95	Op. 9, No. 3  Op. 30, No. 1  Op. 81a	Op. 9, No. 3 (TMB 1) Op. 10, No. 2 (TMB1) Op. 10, No. 3 (TMB1) Op. 12, No. 2 Op. 13 Op. 29 Op. 31, No. 1 Op. 53 Op. 97 Op. 106 Op. 111 Op. 130
<b>Totals:</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>12</b>
<b>Schubert:</b>	D. 173  D. 353 D. 385 D. 566 D. 571 D. 667 D. 703 D. 784  D. 821	-	D. 894	D. 36  D. 68 D. 279 D. 408 D. 613 D. 617 D. 840 D. 887  D. 898 D. 929 D. 947 D. 956	D. 112 (TMB1 and 2) D. 613 D. 625	D. 36  D. 68 D. 112 D. 279 D. 537 D. 575 D. 803 D. 810 (TMB2) D. 812 D. 887 D. 898 D. 960
<b>Totals:</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>12</b>	<b>3</b>	<b>12</b>
<b>Mendelssohn:</b>	Op. 13  Op. 18  Op. 20  Op. 44, No. 2 Op. 58 Op. 106	Op. 4  Op. 66  Op. 80  Vla Sonata	-	Op. 44, No. 1 Op. 44, No. 2 Op. 44, No. 3  Op. 45	Op. 12  Op. 87	Op. 13  Op. 44, No. 2  Op. 45
<b>Totals:</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>3</b>
<b>Brahms:</b>	Op. 5 Op. 36 Op. 38 Op. 78  Op. 99 Op. 114	Op. 51, No. 1 Op. 115	-	Op. 18	Op. 120, No. 1 Op. 120, No. 2	Op. 1  Op. 8 Op. 25 (TMB2) Op. 34 Op. 51, No. 1 Op. 88
<b>Totals:</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>6</b>

TABLE 9  
Summary of MC usage (196 MCs)

Category:	V:HC MC	I:HC MC	V:PAC MC	I:PAC MC	minor- mode	cont. expo	TR↔B (elided bass)	TR↔B (active bass)	non-standard cadence	MC evaded	chord inversion etc.	Non-standard key
<b>Beethoven:</b>	28	12	2	0	9	5	10	2	0	1	3	12
<b>Schubert:</b>	5	7	1	1	4	2	9	0	1	12	3	12
<b>Mendelssohn:</b>	4	0	1	0	5	0	6	3	0	3	2	3
<b>Brahms:</b>	5	0	0	0	6	0	6	2	0	1	2	6
<b>Totals:</b>	<b>42</b>	<b>19</b>	<b>4</b>	<b>1</b>	<b>24</b>	<b>7</b>	<b>31</b>	<b>7</b>	<b>1</b>	<b>17</b>	<b>10</b>	<b>33</b>
<b>% of sample:</b>	<b>21.43</b>	<b>9.7</b>	<b>2.04</b>	<b>0.52</b>	<b>12.25</b>	<b>3.57</b>	<b>15.2</b>	<b>3.57</b>	<b>0.52</b>	<b>8.7</b>	<b>5.1</b>	<b>16.84</b>

TABLE 10  
Chronology of Beethoven's MC usage

<b>V:HC</b>	2/2;2/3	1/1;1/2	81b	10/2	7	16	14/1;14/2	9/1;9/2	12/1;12/3	18/1;18/2;
<b>MC:</b>										18/6
<b>I: HC MC:</b>	4	2/3	87	49/2	5/1	71	6			18/5 20
<b>V: PAC MC:</b>				10/3		7				
<b>I: PAC MC:</b>										
<b>III: HC MC:</b>		1/3	49/1	10/1	5/2					18/4
<b>Cont. expo.:</b>										
<b>Other:</b>	2/1	10/2;10/3						9/3	12/2	13 18/3
<b>Date:</b>	1792	1794			1796					1798

<b>V:HC</b>	22	24	28	30/3	31/2;31/3	47	59/1;59/3	69	70/2	74
<b>MC:</b>										
<b>I: HC MC:</b>	24								71	
<b>V: PAC MC:</b>										
<b>I: PAC MC:</b>										
<b>III: HC MC:</b>			30/2			57				
<b>Cont. expo.:</b>									78	79
<b>Other:</b>	23	29	30/1	31/1	53	59/2	70/1			81a
<b>Date:</b>	1800			1802		1804	1806		1808	

<b>V:HC</b>	96									
<b>MC:</b>										
<b>I: HC MC:</b>										
<b>V: PAC MC:</b>										
<b>I: PAC MC:</b>										
<b>III: HC MC:</b>										
<b>Cont. expo.:</b>			102/1	101						135
<b>Other:</b>	95	97	90	102/2	106	109	110	111	127	132 130
<b>Date:</b>	1810	1812	1814	1816	1818	1820		1822	1824	1826

TABLE 11  
Brahms, Op. 68/i, A theme

<b>Bars:</b>	38	42	46	51	57	67	70	74	78	84
<b>Inter-thematic function:</b>	A						(TR⇒A <sup>1</sup> )			
<b>Intra-thematic function 3:</b>	Intro.	A sentence					A <sup>1</sup> period			
<b>Intra-thematic function 2:</b>		statement	response	continuation		cadence	antecedent		consequent	
<b>Intra-thematic function 1:</b>				1	2		b.i.	c.i.	b.i.	c.i.
<b>Cadence:</b>	IAC	HC		HC?	IAC		IAC		PAC	